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THE SHELTERED WORKSHOP FOR TRAINABLE MENTALLY RETARDED:

A SELECTED BIBLIOGRAPHY IN OUTLINE FORM

Larry Jageman and Lemar J. Clevenger

The sheltered workshop serves the dual roles of sheltered employment and vocational training for the trainable mentally retarded. Both roles require maturity beyond the embryonic development of most workshops in the following procedures and services: client evaluation and job placement; developmental vocational training considering the diversity of abilities, limitations, potentials, and interests of the trainable mentally retarded; training of functional living skills; provision of basic needs for housing, meals, transportation, and recreation; protection of client rights; efficient materials and contract procurement, production, and product sales; effective solicitation of all potential fund sources; and finally, training and employment of qualified professional personnel.

This bibliographic compilation contains 123 citations originally prepared and published in *Mental Retardation Abstracts*, volumes one through eight, during the period from 1963 through December 1971. Each citation has been listed under the outline heading which best represents the article. Articles which contain references to two or more subsections of the outline are listed under the major section heading encompassing the subsections to which the article refers. Therefore, it is recommended that a person researching a specific topic should: first, read the articles listed under a specific subsection of the outline; secondly, refer to articles under the major heading; finally, refer to those articles listed under the section "I. General."

The outline organization of this bibliography serves to organize the material in a manner to facilitate location and identification of literature which deals with both general and specific topics and issues concerning sheltered workshops for the trainable mentally retarded and to exhibit the need for further investigation, research, and writing by the obvious paucity of citations under specific headings in the outline.

The bare outline is provided initially to aid in comprehension of its continuity and totality.

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c. Building
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d. Utilities
(No references)

e. Materials
(No references)

f. Shipping
(No references)

H. Records
(No references)

I. Subsidiary Client Services

1. Housing
(No references)

2. Meals
(No references)

3. Transportation
(No references)

4. Recreation
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V. PLACEMENT AND FOLLOW-UP

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ABBREVIATIONS
used in Mental Retardation Abstracts

CNS	central nervous system
EMR	educable mentally retarded
inst	institution, institutionalized
MR	mentally retarded
PMR	profoundly mentally retarded
SMR	severely mentally retarded
TMR	trainable mentally retarded

BROAD ASPECTS OF MENTAL RETARDATION

731 **BORENZWEIG, HERMAN,** Social group work in the field of mental retardation: A review of the literature. *Social Service Review,* 44(2):177-183, 1970.

Although most of the literature on group work with MRs deals more with parents and siblings of retardates than with the MRs themselves, there is enough from which a body of technology can be developed to help socialize the retarded. Knowledge in the field of retardation and its behavioral consequences is generally primitive; there has been a failure to use the retardate himself as a source of knowledge; group work needs a typology of retardates capable of being helped by its methods. The effectiveness of the small group in changing MR behavior is still to be verified empirically; the social worker must be the central figure in working with groups of SMR young adults. In the area of social work, the worker can be a consultant in many areas in structuring a therapeutic milieu. A new technology is needed in transposing group work from the settlement house to MRs; more reports are needed on group work with MRs; professionals should be encouraged to publish information on MR; also social work should change its focus from recreation to expanding the retardate's social functioning. (41 refs.) - *B. Berman.*

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Berkeley, California 94721

732 Torquay, April 1970: Notes on the Federation's 16th conference. *Teaching and Training,* 8(3):71-75, 1970.

The April 1970 conference of the Federation of Associations of Mental Health Workers focused on mental-health services in the '70s. There was concern about changes stemming from transfer of responsibility for educating mentally handicapped children from the "Health" to the "Education" department. Discussion ranged over such topics as replacement of the term "severely abnormal" by the term "mentally handicapped," improving conditions in MR hospitals, anxieties of teachers of the mentally handicapped about their own future, and responses of MR children to special education. The physician's new role in community health services was defined as a multidisciplinary approach to solving current problems; social workers were exhorted to feel responsible for the social conditions which contribute to the personal problems with which they deal; and the social administrator was asked to promote social welfare. (No refs.) - *B. Berman.*

733 **FITCH, JOAN.** From sub-human vegetable to developing person. *Teaching and Training,* 8(2):50-55, 1970.

Wolfenberger's portrayal of how MRs historically have been viewed (all gradations from subhuman to a developing personality) is supported by examples from literature: Wordsworth's "Idiot Boy" is a "holy innocent;" Dostoevsky's Lizaveta (*Brothers Karamazov*) is a "burden of charity;" Dickens' Maggy (*Little Dorrit*) comes over as a human being; Dickens' Smike (*Nicholas Nickleby*) is an "object of pity." Frances King (*The Last of the Pleasure Gardens*) and Peter Nichols (*A Day in the Death of Joe Egg*) see their

handicapped characters as "subhuman vegetables." Only in R. C. Hutchinson's *A Child Possessed* do we see a retarded child regarded by her father as a person in her own right, beginning to show growth in all developmental aspects. "It's a slow business," says the father. "The hard thing is getting rid of one's assumptions." (7 refs.) - *B. Berman.*

No address

734 **KOLSTOE, OLIVER P.** Defining mental retardation. In: Williams, Eddie H.; Magary, James F.; & Moore, Fred A., eds. *Ninth Annual Distinguished Lectures Series in Special Education and Rehabilitation.* Los Angeles, California, University of Southern California, 1971, p. 77-96.

Definitions of MR are traced from ancient Roman law through recent and contemporary legal, psychological, and neurological characterizations. Definitions have ranged from "inability to manage property or affairs" to "lack of understanding from time of birth." Intellectual incompetence or lack of understanding has been the definitive characteristic of MR throughout recorded history. Systematic analysis of the nature of the inadequacy began with Binet and Simon who asked not what the bright and dull looked like but what they could do. Subsequent definitions dealt with primary or secondary amentia, insufficiency of neurons, social inadequacy, and arrested or incomplete development of the mind (English Mental Deficiency Act). The latter line of inquiry focused on the intellectual differences between the retarded, average, and bright, and led to emphasis on quantitative differences and comparative performance (Spearman, Thurstone, Guilford). Piaget suggested intellectual growth is characterized by qualitative–not just quantitative–changes as a child matures, and intelligence reflects an ability to develop new systems of thinking. Subsequent developments have stressed diminished central nervous system efficiency and neurophysiological capacity. A compromise definition of MR would include both quantitative and qualitative aspects. (27 refs.) - *B. Berman.*

No address

735 The problem of mental retardation. *Qawwi Qalbek,* 10:6-9, 1970.

All but a small percentage of MRs can attain, with proper help, some degree of independence. Care must start very early, for studies have shown that 80% of one's intellectual development occurs by age 8. The bulk of retarded children is from impoverished homes–these are the "mild" or borderline retardates spawned by social and cultural deprivation. Unlike retardation of biologic or organic cause, the "social" form is reversible; without early assistance, however, these individuals will not be able to meet the demands of society. Important in caring for retardates are community services (educational facilities, diagnostic and evaluation clinics, day-care centers, recreational facilities, vocational training, rehabilitation programs, and sheltered workshops), sheltered homes, proper residential care (for the more severely retarded), parent counseling, adequate manpower (especially, allied manpower to relieve professionals), and special education. Above all, rehabilitation can be the key to a new life for retardates; for increasingly, employers are learning to appreciate their vast potential for productive work. (No refs.) - *B. Berman.*

736 From charity to rights. *Qawwi Qalbek,* 11:5-7, 1970. (Maltese translation, p. 8-10.)

All MRs in Malta should receive the help they need, and fees which would limit access to this help should not be charged. A National Register which would specify the magnitude of the problem of MR is needed. The projected Mental Health Act should help the public distinguish between MR and mental illness. Clergymen, teachers, social workers, and volunteers should be trained to counsel the families of MRs. MRs should not be denied their legal rights or their rights to health services, education, special welfare, or employment. Conditions in residential institutions for MRs should be improved. (No refs.) - *J. K. Wyatt.*

737 Facts about mental retardation. *Qawwi Qalbek,* 11:15, 1970. (Maltese translation, p. 14.)

A chart presents data on mild, moderate, severe, and profound MR. Information on maturation and development are provided for ages 0 to 5 years, training and education for ages 6 to 21

years, and social and vocational adequacy for adults. Environmental factors which may contribute to MR are outlined for the varying degrees of retardation. (No refs.) - *J. K. Wyatt.*

738 **SCOTT, A. E.** The registry for handicapped children and adults—British Columbia. *Deficience Mentale/Mental Retardation*, 20(2):17-20, 1970. (French translation, p. 44-48.)

Since 1950, British Columbia has maintained a Registry for Handicapped Children. Adults have been included since 1960. Among the leading registered disabilities are 7,339 cases of MR (21.7% of caseload), 2,572 cases of epilepsy (9.3% of caseload) and 2,202 cases of cerebral palsy (6.5% of caseload). Approximately 200 new registrations are received each month. Follow-up methods include an annual check by Health Unit offices, review of the monthly death list, the use of postdated cards to obtain review data, and follow-up of children at ages 7 and 14 years. Registry information is used to study families to determine etiology for genetic counseling and to plan programs. Registry data on MR reveal that 5,000 MRs live in the community, 25% of all cases mention MR at the 7 and 14 year follow-up, and etiological cause of condition is unknown in 80% of the cases with MR. (No refs.) - *J. K. Wyatt.*

No address

739 **CAMERON, D. R.** CAMR nation-wide series of demonstration and research projects on mental retardation—A humane and human enterprise. *Deficience Mentale/Mental Retardation*, 20(2):21-25, 1970.

The goals of the Centre for the Study of MR (University of Alberta) are to conduct basic and applied research, evaluate current services, and provide exemplary clinical services as well as specialized manpower training. Present behavioral and social science research includes studies of learning processes, social status, personality structure, and physiological mechanisms in MR. A study of concept formation found that EMR children could classify objects on the basis of common characteristics and could apply classification principles to other more difficult problems when similar objects were involved. A demonstration project is investigating the effects of an early education program on 3- to 6-year-old children with Down's syndrome. Biomedical research on Down's syndrome babies has revealed that muscle tone and related functional aspects improved when low levels of brain serotonin were increased to normal by oral administration of a precursor of this amine. (No refs.) - *J. K. Wyatt.*

University of Alberta
Edmonton, Alberta, Canada

740 **SOLOMONS, GERALD.** Prevalence of speech and hearing problems in a child development clinic population. *Clinical Pediatrics*, 9(7):384-389, 1970.

Among the 591 handicapped children evaluated in a child development clinic were 386 (65%) who had speech and/or hearing problems (7% had both, 3% had only hearing loss). The most common speech disorders were articulation problems and speech retardation, and the most prevalent etiologies were functional and MR. Among the children diagnosed as having "encephalopathy" (minimal brain dysfunction or IQ<50) 68% had speech disorders. Among those with primary behavior disorders, 40% had articulation problems. With such a high incidence of speech and hearing disorders, it is essential that a speech and hearing clinician be a part of the multidisciplinary evaluation team and that such examination be a routine part of every evaluation. (18 refs.) - *E. L. Rowan.*

University of Iowa
Iowa City, Iowa 52240

741 **ABELLO, VICTOR B.** Wolf children—truth or fallacy? *Clinical Pediatrics*, 9(7):425-428, 1970.

Nonscientific literature reports 18 children who have supposedly been raised by wolves. Sixteen of these feral children were found in India. All had walked on all fours, were mute, and feared people. They showed lasting defects of gait, speech, and feeling and probably none were completely humanized. It seems unlikely that infants could

survive in the wild even if cared for by wolves, and older abandoned children would have had to lose learned speech and locomotion. A simple explanation, such as MR, would not explain the ability of these children to care for themselves in the wild. Unfortunately, no study can be made to settle the question. (23 refs.) - *E. L. Rowan.*

University of Oklahoma Medical Center
Oklahoma City, Oklahoma 73104

742 **MENDELSOHN, ROBERT S.** The second-class status of the mental retardate in the United States: Some new directions for the mental health movement. *Clinical Pediatrics,* 9(9):506-507, 1970.

To provide adequate services for MRs, resources need to be reallocated, priorities need to be reordered, and staffing patterns need to be changed. Present practices discriminate against MRs and their families in overt and subtle ways. A "separate but equal" system of recreation and education programs, social agency and medical facilities is often translated into a reality of inferiority and deprivation. Psychological testing insults the MR by emphasizing what he cannot do and it is used to justify the failure of the majority to allocate resources in a way that assures human dignity. The emphasis on study, research, and investigation should be removed, and MR families and children should be given a new sense of their own worth. MRs should be described in terms of human qualities, and positive accomplishments should be emphasized and publicized. Parents and families of MRs should be organized to participate in coalitions with other deprived people. More money may have to be spent on parent organizations, community relations, family involvement programs, and lobbying activities. (No refs.) - *J. K. Wyatt.*

Department of Pediatrics
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P.O. Box 6998, Chicago, Illinois, 60680

743 **WINTSCH, HERMANN.** Integration (Integration). *Deficience Mentale/Mental Retardation,* 20(1):46-47, 1970.

The completion of the special education of the MR patient should be followed by the period of his "integration" into society, primarily as a human being rather than a handicapped person. To that end, it will be necessary to concentrate on: preparing him for useful employment in an industrial society; enabling him to take advantage of his leisure hours, possibly in the company of other MRs; and solving his housing problem by leaving him in the parental home, placing him in a foster home, or placing him in a special home. Having been properly brought-up and educated, the MR is able to behave properly; he can and should be accepted by all as a full-fledged member of society. (No refs.) - *K. Baer.*

No address

744 **NIRJE, BENGT.** Normalisation des structures dans les services des etablissements pour deficients mentaux (Structural normalization in the services of institutions for the mentally deficient). *Nos Enfants Inadaptes,* 33(1):19-21, 1970.

Normalization means that the MR will have a normal rhythm of daily life. It also implies the routine of a normal life in general—not only for the day, but also for the year, with vacations and family celebrations having a special meaning. Normalization also should enable the MR to undergo the experiences of the normal development of the life cycle, from youth to old age; it means that his wishes should be considered to the greatest extent possible, at all times. The dangers of the MR living in a bisexual society have been grossly exaggerated. Retarded men and women should be mixed, in a manner that is as close as possible to normal life. Effective normalization will aid the individual in acquiring independence and achieving complete integration; accordingly, it will also help parents and employers. The new Swedish law concerning the MR, which is quoted and commented on in some detail, reflects the principle of normalization and is suggested as a model for other countries. (No refs.) - *K. Baer.*

No address

745 **DYBWAD, GUNNAR.** Les enfants mentalement handicapes de moins de cinq ans (Mentally handicapped children below the age of 5 years). *Nos Enfants Inadaptes,* 33(1):7-8, 1970.

From a financial point of view, temporary placement of children is preferable to permanent

institutionalization. Practical training of baby-sitters for handicapped children is suggested as a necessity of our times. The continuous pediatric surveillance of retarded children, particularly those with Down's syndrome, is essential. Language problems require consultation with a language specialist. All the various specialists listed with their services will help parents most effectively with the child's problems of sleep, feeding, physical exercises, play, language development, and cleanliness, with a view toward preparing him for "integration." If possible, the child should join normal kindergarten classes. At the same time, his physical training should not be neglected. The idea that a governmental department has the sole responsibility for the child is to be strongly discouraged; the family also carries responsibility. (No refs.) - *K. Baer.*

No address

746 **BAYES, KENNETH; & FRANCKLIN, SANDRA.** The handicapped and their needs. In: Bayes, K.; & Francklin, S., eds. *Designing for the Handicapped.* London, England, George Godwin, 1971, p. 3-10.

Traditional methods of categorization of the human condition are controversial, since they do not reveal enough about the disabilities or potentials of the individual to indicate effective treatment programs. It is convenient to categorize the handicapped by their mental or physical disability or emotional instability, although these classifications often overlap. The numerous medical and educational services available for diagnosis, assessment, and aid from the time of birth should be utilized to the fullest extent. Unfortunately, a comprehensive and coordinated service administering to the needs of the handicapped individual throughout his lifetime is presently inhibited by the division of responsibility at all levels, and categorization of the handicapped into types tends to divide handicapped persons who receive special care into separate groups early in life. The central government can be too remote from real community problems to be of assistance. Greater initiative and responsibility must be undertaken at the local level in order to achieve coordinated and comprehensive planning. (No refs.) - *B. J. Grylack.*

747 **NELLIST, IVAN.** The mildly mentally subnormal. In: Bayes, K.; & Francklin, S., eds. *Designing for the Handicapped.* London, England, George Godwin, 1971, p. 27-30.

In children, an IQ from 50-69 is generally accepted as falling within the mild subnormality range. In practice, there is very little basis on which to distinguish the more backward children in an ordinary school from the brighter children in one of the special schools for the educationally subnormal. Mild subnormality is unlikely to manifest itself in very early years, and it is only when speech and self-expression are expected and, perhaps, when a child begins school life, that subnormality is diagnosed. For children between the ages of 11 and 16 there is a constant process of assessment that may enable them to progress to an ordinary school or lead to a greater emphasis on practical occupations. The adolescent at age 16 will be spending more and more time on vocational training unless he has graduated to more normal education. In adult life, the mildly subnormal individual may live in the parental home or may have become sufficiently self-reliant to own his own home and to hold his own job. An adult hostel as a substitute for a home environment is an intermediate solution. (No refs.) - *B. J. Grylack.*

748 **CORONADO, GUILLERMO.** Estructura del equipo multidisciplinario en la deficiencia mental (Structure of the multidisciplinary team in mental deficiency). *Boletin del Instituto Interamericano del Nino,* 44(172):12-18, 1970.

The composition of teams which may be able to tackle the many aspects of the problems posed by MR is outlined. The medical aspects require a psychopediatrician, nurse, a dentist, a psychiatrist, a neurologist, an electroencephalographist, a clinical analyst, an otorhinolaryngologist, and an ophthalmologist. The social and familial aspects require specialized social workers and psychologists. The education of the MR requires specialized teachers, gymnastic instructors, and speech therapists. In addition biochemists, geneticists, gynecologists, and statisticians are involved in the prevention of MR. Special institutions are needed for medical care, work, and recreation and for research in retardation. Families should be trained to help in treatment. The teams should have a competent leader who aptly coordinates the work and assesses its results. Informing the public is essential in aiding prevention and creating goodwill. (5 refs.) - *G. Van Massenhove.*

No address

749 La familia y la sociedad ante el problema de los subnormales (The family and society faced with the problem of subnormality). *Boletin de Pediatria y Deficiencia Mental*, 14(55):121-128, 1970.

Papers read in June, 1970, at a symposium organized by the Madrid Society of Pharmacists included discussions on the attitude of families and society vis-a-vis the MR, prophylaxis and early detection of MR, and re-education and socio-economic recuperation of the MR. The present situation in Spain is very weak when compared with what should and could be done. Better parent organization is needed. (No refs.) - *G. Van Massenhove.*

750 **WIRTZ, MORVIN A.** Expanding concepts in mental retardation and cultural deprivation. *NCEA (National Catholic Education Association) Bulletin*, 66(1):94-108, 1969.

Two communities, one with an average income of more than $20,000 and another, $3,200, were studied to determine the relationship of perceived MR and cultural deprivation. The wealthier community had a tax base which allowed it to spend $1,000 per year per student. When the usual intelligence measurements were made, less than 0.5% of the children in this community was classified as MR; all of them had an IQ below 70, and most had some identifiable organic etiology. The poorer community spent $350 per year per child for education. Here, 33% of the school population could be classified legally as MR, with the overwhelming majority fitting into the upper levels of the MR range. Differences in home backgrounds, curriculum, staff, physical facilities, and equipment available to each community were found to be responsible for discrepancies between the 2 groups of school children. In addition to economic remedies, increased attention to special education is needed, particularly in the areas of intellectual, sensory, and emotional deficit. (6 refs.) - *B. J. Grylack.*

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751 **WORTIS, JOSEPH, ed.** *Mental Retardation. An Annual Review. III.* New York, New York, Grune and Stratton, 1971. 243 p.

This issue includes a review of selected recent French literature in MR, the first of a series of projected foreign literature reviews. Included also are a 1971 calendar of meetings related to MR and a chronicle of important events in this area during the period of January through June, 1970. This comprehensive review of recent literature in MR is of interest to all scientific and medical disciplines which have direct or peripheral interest in the subject. The inclusion of legal and legislative aspects will also interest lay individuals and organizations concerned with MR. (1,329 refs.) - *M. S. Fish.*

CONTENTS: Clinical Aspects (Kirman); Guardianship (Martin); Neuropathology (Jervis); Metabolism (Snyderman); Dentistry (Diner); Residential Service (Helsel); Federal Legislation: 1955-1965 (Boggs); Operant Conditioning (Block); Recent French Literature; Psychoeducational Aspects (Jedrysek); Pediatrics (Drayer & Guzman-Neuhaus); Psychiatry (Rutter); Prevention (Wortis).

752 **THOMAS, G. E.** The at-risk register. *Lancet*, 2(7674):672-673, 1970. (Letter)

There is yet no scheme that combines a manageable proportion of children for observation with an acceptable rate of detection of subsequent handicaps. Most hospitals follow up a small group of "high-risk" children for whom pediatricians think the available consultant and diagnostic facilities are suitable. A more practicable alternative – and less dependent on the limited resources of skilled personnel – is prescriptive screening for the whole infant population, using a questionnaire on the infant's achievements at various ages, based on developmental milestones taken from many sources. This should be the procedure for keeping all children under observation. (3 refs.) - *B. Berman.*

Area Health Department
Harlow, Essex, England

753 **TABORDA, MARIO.** Meios audio-visuais e debilidade mental (Audio-visual media and mental disability). *Revista Portuguesa para o Estudo da Deficiencia Mental*, 1(3):273-278, 1970.

The audio-visual media have a marked impact on our civilization. Since intellectual knowledge starts from sensory perceptions, especially sight and hearing, the media reach the depths of the mind and feelings. Since these media are a combination of several earlier forms of communication, they have a deeper influence than the printed or spoken word. They even tend to have such a grip on people as to threaten to deprive them of their personality. Television is especially powerful and fascinating to children. Those who are MR, unbalanced, have characteriological or familial problems are most likely to be harmed by television, which may provide them with a passive satisfaction, stimulate their aggressivity or distort even more their conception of reality. (No. refs.) - *G. Van Massenhove.*

Centro de Saude Mental do Porto
Lisbon, Portugal

754 Body-bound author scales literary peak. *Medical World News,* 11(24):26, 28, 1970.

An individual who has athetoid cerebral palsy and is unable to control his movements except for his left leg and foot has taught himself to draw with his toes and type with his left great toe. His second book has recently been published in the United States and Britain. The attention of a physician who was interested enough to deal with his mind and talent as well as with his body is credited with much of the author's success. (No refs.) - *M-E. Sayre.*

755 **TURNURE, JAMES E.** Distractibility in the mentally retarded: negative evidence for an orienting inadequacy. *Exceptional Children,* 37(3):181-186, 1970.

Three studies of the orienting behavior of normal and MR children disclosed that retardates in controlled conditions were found to be less inattentive and distractible than is widely believed. The first experiment was designed primarily to compare the orienting responses of MR and normal children in a learning situation. It indicated that the retarded may unwittingly be placed in circumstances of unfair competition with the nonretarded, one result of which is a probably erroneous characterization of MRs as being highly distractible. In Studies II and III, similar studies of retardates only, an adult was present in the learning situations. It was found that the children tended to glance more. However, if the adult provided cues, these would be utilized by the subjects; thus, the MRs' glancing appears to have represented information-seeking and not mere inattention to their task. A new approach to children's attending behaviors is suggested to account for the findings. Several possibilities for further research are included. (14 refs.) - *M-E. Sayre.*

University of Minnesota
Minneapolis, Minnesota 55455

756 **CRUICKSHANK, WILLIAM M.; & QUAY, HERBERT C.** Learning and physical environment: The necessity for research and research design. *Exceptional Children,* 37(4):261-268, 1970.

School planning and construction is not, at present, well adapted to the needs of pupils in special education programs. There is a lack of research design of buildings and facilities which has resulted in increasing concern regarding planning and the provision of appropriate physical facilities. Frequently, facilities decisions are made by architects and special educators without obtaining empirical evidence on actual needs. To improve the situation, measurement techniques such as simple observation, research design, classical control group design, use of quasi-experimental design, and contingency reversal design are suggested. The issue of creating effective physical facilities is of sufficient importance to become a major concern of research-oriented persons and agencies. (3 refs.) - *M-E. Sayre.*

University of Michigan
Ann Arbor, Michigan 48104

757 **ABESON, ALAN; & TRUDEAU, ELAINE.** Handicapped children redefined—Legal eligibility for services expanded. *Exceptional Children,* 37(4):305-311, 1970.

A review is presented of state laws regarding programs for exceptional children. In recent years, these laws have, in many cases, undergone a marked broadening of groups of persons included within their scope. These expansions have occurred in relation to ages (both earlier and later ages becoming eligible) and to types of disabilities.

Examples of individual state laws are given, and a table summarizing laws for all 50 states is presented which contains the categories of coverage and the minimum and maximum ages for treatment of MRs and other mentally and physically handicapped. (No refs.) - *M-E. Sayre.*

Council for Exceptional Children
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Arlington, Virginia 22202

758 **LOVE, NASH W., JR.** The relative occurrence of secondary disabilities in children with cerebral palsy and other primary physical handicaps. *Exceptional Children,* 37(4):301-302, 1970.

Purposes of the study were to learn the type and severity of secondary handicaps most often combined with primary physical disabilities and to determine the differences between children with cerebral palsy (CP) and those with other physical handicaps (PH) as to the incidence of such handicaps. Of a total of 61 PH elementary school children aged 6 to 12, 51 (84%) had secondary disabilities. In the CP group, 92% had such handicaps, compared with 74% in the PH group. MRs (IQ $<$ 90) comprised 69% of all children in the study; in CPs, 80% was MR, as against 52% of the PH group. In the CP group, 44% was EMR, 31% was "slow learners" (IQ 80-89) and 5% was TMR; in the PH group, 20% was EMR, 28% was slow learners, and 4% was TMR. Visual defects, speech disorders, emotional problems and other disabilities were found in conjunction with primary disabilities. CP children were found to suffer significantly more MR, speech disabilities, and other secondary problems than children having other types of physica' handicaps. Complete evaluations should be made prior to school placement, and a widely heterogeneous educational approach is needed to serve the needs of the child victim of multiple physical disabilities. (No refs.) - *M-E. Sayre.*

East Carolina University
Greenville, North Carolina

759 **CRUZ-COKE, R.** Birth control and sex ratio. *Lancet,* 2(7669):426, 1970. (Letter)

A summary of demographic data in Santiago, Chile, between 1960 and 1969, during which time maternity units established family-planning centers, has shown that an inversion in the sex ratio of stillbirths has occurred. During this time interval the number of women protected under National Health Service programs increased from 0 to an estimated 150,000. Crude birth rate (per 1000) fell from 35.6 to 25.0 during this period, and primipara frequency, compared to high multipara frequency, changed from 25.0 and 26.7, respectively, in 1960 to 35.3 and 17.0, respectively, in 1969. Of most significance was the inversion in the sex ratio of stillbirths. The male/female ratio in 1960 was 1.097 but was 0.884 in 1969. The sex ratio in live births was unchanged. While the inversion in sex ratio of stillbirths can be partially explained by an increase in anencepahaly and malformations which have a female preponderance in other areas, a complete explanation of this phenomenon is not yet available. (10 refs.) - *M. S. Fish.*

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University of Chile
Santiago 4, Chile

760 **DADA, T. O.** The Nigerian neurological profile. *Diseases of the Nervous System,* 31(11):746-755, 1970.

A study of the neurological profile in a teaching hospital in Nigeria has, despite problems of accurate measurement, provided information on certain disorders which requires further investigation. Of a total of 1,220 neurological admissions during a 5-year period, about 85% were due to: tetanus (36%), cerebrovascular accidents (16.8%), epilepsy (10.2%), paraplegia (9.0%), meningitis (8.3%), and polyneuropathy (4.1%). The remainder were due to tropical neuropathic syndromes, Parkinson's syndrome, neurosyphilis, encephalopathies, and poliomyelitis, in decreasing order of incidence. Males predominate in the population of this and other hospitals, probably for socioeconomic reasons. The incidence of epilepsy is particularly high in Nigeria, since not all patients require hospitalization and many (about 40%) seek unorthodox medical treatment. Despite the difficulties in accurate assessment, certain findings related to these and other diseases deserve attention: the comparative rarity of multiple sclerosis; uncommon incidence of pineal gland calcification; and the rarity of coronary artery disease. Explanations are needed for these discrepancies between African and European populations. (51 refs.) - *M. S. Fish.*

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University of Lagos
Lagos, Nigeria

MEDICAL ASPECTS – Diagnosis (General)

761 **STIMSON, CYRUS W.** Genetic aspects in the diagnosis and management of mental retardation. *Archives of Physical Medicine and Rehabilitation*, 52(3):115-118, 1971.

Some conditions associated with MR are treatable and others are preventable. Parents who have had affected children or know they are at-risk may have prenatal cytologic or chemical testing done on amniotic fluid and consider abortion. For the child with MR, some forms are manageable by drug (cretinism), dietary (phenylketonuria), or surgical (hydrocephaly) therapies. Environment adjustment in the form of learning opportunities should also be considered. (19 refs.) - *E. L. Rowan.*

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New York, New York 10038

762 **HEITZMAN, MARTIN.** Radioactive bromide in the diagnosis of central nervous system disease. *Diseases of the Nervous System*, 31(7):483-486, 1970.

Of 24 patients on whom a blood serum/cerebrospinal fluid partition ratio was determined, 5 presented with possible neurosyphilis and 1 with possible tuberculous meningitis. Among the central nervous system conditions present in the other 18 cases who had a normal bromide partition were head injury, multiple sclerosis, Guillain-Barre syndrome, chorioretinitis, epilepsy, pituitary tumor, and herniated nucleus pulposus. The test involved oral administration of sodium bromide-82 with the collection of serum and cerebrospinal fluid for radioactivity assay at 24 hours. The bromide partition ratio seems to be a feasible means of ruling out or confirming the presence of active neurosyphilis or tuberculous meningitis. (8 refs.) - *J. K. Wyatt.*

Walter Reed General Hospital
Washington, D. C. 20012

763 **DUGDALE, A. E.** Screening infants for disease. *Clinical Pediatrics*, 99(10):568-570, 1970.

The simplest and most valuable screening tests in a well-baby clinic are growth (weight) and motor development. If both are normal, then only followup on specific complaints and an abbreviated exam are necessary; however, delayed development requires further investigation, as does delayed growth. Organic diseases and malnutrition are most commonly responsible for the latter. Delay in both growth and development suggests inborn errors of metabolism or chromosomal anomalies. Most conditions which might otherwise escape maternal notice can be picked up with this screening procedure. (4 refs.) - *E. L. Rowan.*

University of Malaya
Kuala Lumpur, Malaysia

764 **WEISS, ANDREW E.; & *SCHMIDT, ROSEMARY E.** Developmental evaluation and therapy program: Functional approach to development delays in infant behavior. *Clinical Pediatrics*, 9(10):570-572, 1970.

A maturational assessment and therapy program has been designed to aid in the diagnosis and management of children with delayed development. After examination to assess levels of development, behavior, and maturity, the child is observed in several group play sessions. The home is also investigated. Development may be normal at play but repressed under formal testing. Lack of environmental stimulation (physical, social, and emotional) may also be determined and hopefully corrected, and those children with true organic disorders may be identified and managed appropriately. (9 refs.) - *E. L. Rowan.*

*Good Samaritan Hospital
Cincinnati, Ohio 45220

765 **WALSH, S. ZOE.** Circulation of amniotic fluid. *Clinical Pediatrics,* 9(12):723-726, 1970.

The amniotic fluid is in dynamic equilibrium with its surroundings but the exact mechanisms have yet to be explained. The origin changes during pregnancy. Early in gestation the amniotic fluid is probably a dialysate of maternal fluids. After midterm the fetal kidneys probably play a major role. Amnion and fetal skin may change gradually from secretory to absorptive organs. Most of the fluid is absorbed by the fetal alimentary tract. Alterations in amniotic fluid constituents may be monitored in the assessment of fetal status. (22 refs.) - *E. L. Rowan.*

Karolinska Hospital
Stockholm 60, Sweden

766 **WOLTER, R.** Mise au point des retards de croissance (The evaluation of cases of growth retardation). *Acta Paediatrica Belgica,* 24(3-4):223-230, 1970.

The evaluation of cases of retardation implies an understanding of the complex factors affecting the development of children. Genetic and nutritional factors, general pathological affections, and hormonal equilibrium must be taken into consideration as well as the mental age. Methods used in the study of those various points are reviewed, and the clinical research program as developed in the Pediatric Service of the Free University of Brussels is described. A hospital stay of 3 days is considered necessary and sufficient for the evaluation. (10 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

767 **HOLT, K. S.** Environment for assessment. In: Bayes, K.; & Francklin, S., eds. *Designing for the Handicapped.* London, England, George Godwin, 1971, p. 67-70.

Assessment of a handicapped child should consist of a diagnostic phase, an interpretative phase, and a planning phase. In the assessment situation, the parents and child should be put at their ease. In order to be able to assimilate what is said to them and to feel free enough to present their own problems for discussion, the parents should set the pace of discussion. Accurate assessment of the child at the earliest possible time is vital for the planning and initiation of appropriate programs. To avoid major errors in the design and planning of assessment centers, architecture should be oriented to the special needs and development of the children; the greatest possible flexibility of arrangements must be preserved; furniture, equipment, and examinations of a clinical nature should be minimal; and frequent discussions between the architect and professional workers at the centers should be encouraged. (No refs.) - *B. J. Grylack.*

768 **MATTISON, DONALD R.** Amniotic fluid osmolality. *Obstetrics and Gynecology,* 36 (3):420-424, 1970.

Determination of osmolality of amniotic fluid may provide a promising diagnostic procedure for assessing fetal condition. Experimental materials were 44 samples of amniotic fluid taken at various stages of pregnancy from 3 groups of patients with fetuses at-risk due to hemolytic disease: 3 cases where neonatal death occurred from a cause other than hemolytic disease and 7 cases where the fetus was born alive (2 with positive and 5 with negative Coombs tests). Measurement of osmolality of these samples by freezing point and spectrophotometric methods showed that, in accordance with other reports, osmolality decreases with increasing gestational age from a value which is isotonic with maternal serum to one which is hypotonic. In the first and second (Coombs positive) groups, one each of the pregnancies provided samples which had marked upward excursions of osmolality; 4 of the 5 Coombs negative cases also exhibited this trend; however, all cases showed a decrease in values at the last measurement. The elevated levels may signify a period of fetal and/or placental compromise, and the return to normal may indicate successful response to the compromise or removal of the stress. (4 refs.) - *M. S. Fish.*

College of Physicians and Surgeons
Columbia University
New York, New York 10032

769 **FARR, VALERIE.** An assessment of the value of fetal scalp blood sampling. *Journal of Obstetrics and Gynaecology of the British Commonwealth,* 77(4):294-300, 1970.

The nature of the local population and the type of management of labor should be carefully assessed

before routine fetal scalp blood sampling is employed as a diagnostic procedure for reducing perinatal mortality. Assessment of 2,638 booked patients delivered over a one-year period, mostly in a hospital, indicated that fetal distress occurred in 875 (33.3%) of the cases and perinatal deaths in 42 (20 stillbirths and 22 neonatal deaths). In 38 of the cases, either the events did not indicate or permit fetal scalp sampling, or the procedure would not have affected the outcome. In the other 4 cases, operative delivery might have saved 2 infants although scalp sampling was not really indicated for any of the cases. The procedure might improve the incidence of birth asphyxia, but only if repeated monitoring during labor is carried out. The number of cesarean sections which resulted from clinical fetal distress (18 of the cases) might have been reduced by about one-half if scalp blood sampling had been utilized; however, this group represented only a small fraction of the entire number (131) delivered in this manner. (9 refs.) - *M. S. Fish.*

Aberdeen Maternity Hospital
Aberdeen, Scotland

770 **WATNEY, P. J. M.; HALLUM, J.; LADELL, D.; & SCOTT, P.** The relative usefulness of methods of assessing placental function. *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 77(4):301-311, 1970.

In the assessment of placental function, measurement of estriol excretion appears to be more useful and practical for routine use than does estimation of serum heat-stable alkaline phosphatase and vaginal cytological procedures. Of 2,000 patients delivered during a trial period, 180 were found to be at-risk: bad obstetric history, hypertension, pre-eclamptic toxemia, threatened abortion, accidental hemorrhage, twins, hydramnios, diabetes, renal disease, and "small-for-dates" fetuses. Twice-weekly estimation of 24-hour urinary estriol excretion, thrice-weekly determination of serum heat-stable alkaline phosphatase levels, and weekly vaginal cytological examinations, all carried out for the at-risk group, indicated that the estriol levels gave clear warning of fetal jeopardy in nearly one-half of the cases with placental insufficiency and some indication in most of the cases. Serum heat-stable alkaline phosphatase values were abnormally high or low in about one-third of the cases of placental insufficiency and, in cases of low estriol excretion, may add diagnostic significance to the estriol determinations. The vaginal cytology was the least useful of the 3 tests and appears to have relatively little value in these cases. (10 refs.) - *M. S. Fish.*

Sorrento Maternity Hospital
Birmingham, England

771 **COHEN, HERBERT J.; & DINER, HAROLD.** The significance of developmental dental enamel defects in neurological diagnosis. *Pediatrics*, 46(5):737-747, 1970.

Dental enamel defects may serve as diagnostic markers of possible neurologic disorders; this was the conclusion of a study which compared 3 groups of children (215 Ss, CA 2-14 yrs, from low income families and seen in a clinic for suspected neurological, intellectual, behavioral, or language disturbances; 139 non-clinic children, CA 3-7 yrs, from low income families; and 150 non-clinic children, CA 2-6 yrs, from middle to high income families). Enamel defects were most common in the first group (104 Ss) and least common in the third group (13 Ss). Of the 180 who showed positive neurological signs in the clinic group, 94 had positive dental defects; of the 35 in the clinic group who showed no neurological signs, only 10 had positive dental defects. (X^2, $p<.01$). The differences between the 2 non-clinic populations were statistically significant ($p<.001$). The positive relation between a high incidence of dental enamel defects and low IQ supports other observations of the association of these defects with MR. These observations may aid in indicating the time of insult to the fetus or infant and provide a method for detecting developmental abnormalities in high-risk populations. (18 refs.) - *M. S. Fish.*

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772 **ADAMSON, JOHN F.** A modified team approach for the evaluation of children with moderate or greater mental retardation. *Community Mental Health*, 5(6):476-481, 1969.

A modified diagnostic team approach is recommended for certain types of MR children in order to overcome problems of staff shortage and imbalance. The Ss were 100 moderate and severely

MR children who, along with their families, received diagnostic aid over a 1-year period. Since routine involvement of the usual 4-member team (child psychiatrist, pediatrician, social worker, and psychologist) did not appear to be always essential in cases of simple MR, evaluation was performed by partial diagnostic teams composed of psychologists who performed a diversity of functions, including social history taking and psychological examination, and pediatricians who carried out the physical examinations. The procedure identified a number of patients (about 3-5%) whose MR was psychogenic and who required additional evaluation from social workers and psychiatrists. The modified procedure enabled the partial diagnostic team to handle 100 cases with the same amount of total professional time that would normally afford the evaluation of only 20 cases with the usual team approach. Although additional follow-up evaluations are required, initial results suggest that the partial team approach is useful for MR patients whose IQ is about 50 or below. (9 refs.) - *M. S. Fish.*

Eastern Pennsylvania Psychiatric Institute
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773 Fetal maturity. *British Medical Journal*, 4(5728):129-130, 1970. (Editorial)

Dissatisfaction with traditional ways of assessing fetal gestational age has brought a wide array of new methods. Assessing fetal weight and measuring uterine size in early pregnancy are unreliable. Radiological assessment and bone maturation are advocated by some, but studies on twins have shown inherent errors in such criteria as ossification centers. Ultrasonic measurement of the fetal skull's biparietal diameter is reliable up to the thirtieth week in predicting spontaneous delivery but is too costly. Discovery that amniocentesis can be safe has led to relating menstrual age to various amniotic-fluid characteristics; the most reliable of the fluid's traits are the concentrations of creatinine and urea. All special investigations of menstrual age are subject to error on intrauterine malnutrition and postmaturity. (27 refs.) - *B. Berman.*

774 **RAY, CHARLES D.** New instrumentation for *in vivo* determinations of brain function. In: Tindall, George T., ed. *Clinical Neurosurgery. Volume 18.* Baltimore, Maryland, Williams and Wilkins, 1971, Chapter 8, p. 121-154.

The use of instrumentation in medicine is assuming increasing importance as the physician develops new procedures and attempts better management of previously untreatable disorders. The response of engineering technology to the need for prompt determination of cause and effect relationships in critical stages of therapy and the requirement for more objective and reliable methods for measuring significant metabolic events promise to bring about revolutionary advances in medicine and surgery, particularly in the analysis of *in vivo* activity in the human. The approach to the study of complex systems by transient response analysis (measurement of a system's behavior after the introduction of a disturbance) is proving useful in clinical medicine; the insulin and glucose loading tests and the average evoked response in neurophysiology are examples of this approach. In these *in vivo* systems prompt recognition of relative changes may be more important than absolute measurement of values. A multiprobe technique has been useful in the study of epilepsy (for localization of seizure foci), in analysis of brain tumors and their response to therapy, and in the differential diagnosis of brain death. While the present use of these electrode contacts is limited to a small number of measurements, future developments may provide analysis of specific ions, injected tracers, enzymatic processes, and cellular physics. Present technology affords a variety of types of electrodes which can measure a wide range of both anions and cations outside of the body. Miniaturization of these devices so that they may be implanted for the purpose of *in vivo* measurements is the next step. Fiber optics are being developed for detection of metabolic changes of large molecular complexes; if combined with spectral absorption analysis, this technique may make possible a study of fast moving transients and kinetic chemical reactions. Polarography can be used for determining oxygen availability and blood flow but cannot measure many materials of physiological interest such as heavy metals. Measurement of brain impedance gives information on boundaries of cysts and tumors; further development may afford *in vivo* studies of enzymatic and immunological factors. *In vivo* measurement of radioactivity is now limited, but future prospects are promising. Other approaches to *in vivo* studies include: ultrasonics for displaying 3-dimensional images, magnetic devices to control transport of materials through blood vessels, and improved thermometry to measure small temperature changes. To convert the results of these and

future techniques into a useful form, new methods of data reduction and display of complex functions will be required, as will a close cooperation of man and machine in order that the massive amount of data can be utilized to the best advantage of the patient. (51 refs.) - *M. S. Fish.*

775 **KIRMAN, BRIAN H.** Clinical aspects. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 1, p. 1-20.

Despite the recent involvement of an increasing number of disciplines in MR, the role of the clinician in giving advice to families and in the assembly and organization of diagnostic information to assess the MR remains important. A tentative classification of these latter types of data includes: the clinical psychiatric syndrome, the intellectual level, associated or etiological factors, and psychological aspects such as parental neglect or deprivation. The clinician must recognize that many individual differences occur within the framework of single syndromal or etiological classifications and that a wide range of levels of performance may occur within specific etiological groups. Many of these differences may have both pre- and post-natal environmental causes (e.g., placental insufficiency, malnutrition, and cultural factors), and the main difficulty arises when a combination of several of these effects is involved. Considerable recent information regarding a number of individual causes of MR has provided the clinician with more tools to utilize in the assessment of the effects of these combinations. Evidence now indicates that severe maternal or infantile malnutrition can have serious effects; however, the contribution of lesser degrees of unsatisfactory early nutrition is difficult to distinguish from that of other causes. Technical developments enable the physician to evaluate more completely the jaundiced neonate and, as a consequence, provide a guide for the prevention of brain damage. Rubella embryopathy is likely to become increasingly rare as vaccine programs progress. A number of conditions such as phenylketonuria and Down's syndrome are known to have primarily genetic causes. As chromosomal studies become more detailed, the clinician will be able to distinguish better between such conditions as those attributable to a point mutation, those resulting from a chromosomal anomaly, and those in which genetic factors play a smaller role. Most of the more common errors caused by point mutations and chromosomal abnormalities are probably now recognizable. Studies are also delineating more information regarding abnormalities which can be transmitted in an autosomal recessive manner or in a sex-linked recessive fashion. The wide range in differences among certain patients, such as MR epileptics, makes the determination of proper medication difficult. Drugs such as anticonvulsants, sedatives, and tranquilizers, however, all have a place in the management of disturbed retardates. Unsuitable institutional environments are usually associated with pathological stereotypes, some of which do not appear to be aided by medication alone. Solution of the problem of noncommunication must be based initially on the determination of whether or not the S can hear, and recent advances are aiding in this diagnosis. Life expectancy of the hospitalized MR, while improved in recent years, still remains appreciably lower than that of the general population. (126 refs.) - *M. S. Fish.*

776 **JERVIS, GEORGE A.** Neuropathology. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 3, p. 32-50.

Recent reports have provided much new information on neuropathology associated with MR. Many are case reports which describe new conditions or further delineate known disorders. Additional data on malformations of the CNS, including those associated with chromosomal abnormalities, describe neuropathological features of cases of agenesis of cerebellar vermis and holoprosencephaly; however, few recent reports have provided information on neuropathological findings associated with chromosomal abnormalities. A number of new clinicopathological syndromes and other known syndromes for which additional pathological data are reported include: Norman's syndrome, encephalocraniocutaneous lipomatosis, Sjogren-Larson syndrome, Smith-Lemli-Opitz syndrome, Alper's disease, spongy degeneration of the brain, cerebrocastomandibular syndrome, ataxia telangiectasia, Lehrmitte-Duclos syndrome, neuronaxonal dystrophy, syndrome of the little fighter of de Lange, cerebrohepatorenal syndrome, and neurocutaneous melanosis. Many recent advances in lipid chemistry and in new techniques have aided neuropathological investigations in the area of cerebral lipidosis, a relatively rare condition which includes: Tay-Sachs disease, generalized gangliosidosis, Krabbe's disease, Niemann-Pick's

disease, Gaucher's disease, and others. Other metabolic abnormalities, particularly those related to disorders in the metabolism of carbohydrates and amino acids, have been the object of considerable study. New diseases in this area (fucosidosis and mannosidosis) have been identified, and additional pathological information on other well-known forms (phenylketonuria, maple syrup urine disease, for example) has been reported. Investigators have reported neuropathological data on destructive processes, including necrotizing myeloencephalopathy and hypoxic damage to the brain in infants. Finally, investigations of brain lesions due to infections such as toxoplasmosis and those of known or suspected viral origin (Reye's syndrome and subacute sclerosing panencephalitis) have afforded new data; and studies have been made of miscellaneous and unclassified abnormalities, including an attempt to relate the cause of MR to morphological alterations observed on autopsy of 359 brains. (139 refs.) - *M. S. Fish.*

777 **DONOHUE, JAMES F.** Computer-based study of mental retardation. *Computers and Automation*, 18(11):50-52, 1969.

Computer-aided studies have been effective in reducing the mortality of SMR children and may provide useful information related to the causes and mechanisms of the abnormality. An alerting mechanism based on the identification of major classes and subclasses of institutionalized MR children (Ss in the high-risk group were under 5 years of age and had IQs < 30) prompted physicians and other hospital staff to provide special services and was probably a principal determinant in a major reduction of mortality in this group, over an 8-year period of time. Physiological monitoring of electroencephalographic readings is now computerized and provides data on average evoked responses to various stimuli while filtering out distortions caused by the conductive fluid surrounding the brain. The approach promises to aid in the determination of how the MR reacts to visual, auditory, and other stimuli and how various parts of the brain interact for these individuals. Computer-based community studies have emphasized the importance of cultural deprivation in the MR diagnostic ratio. One estimate suggests that 30-40% of an institutionalized group of MR may have an environmental etiology and points to the need for new and better diagnostic procedures. (No refs.) - *M. S. Fish.*

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778 **DRAYER, CARL; & GUZMAN-NEUHAUS, GILDA.** Pediatrics. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 10, p. 160-185.

The role of the pediatrician in MR encompasses nearly every aspect of the abnormality; however, a number of diagnostic entities deserve particular attention. One of the most important of these is malnutrition, both intra- and extra-uterine, and its effects on mental function and on physical growth. Recent studies have indicated that malabsorption, in which amino acid transport may be affected primarily (as in Hartnup's disease) or secondarily (as in phenylketonuria or galactosemia), may have a causal relationship to MR. Early diagnosis and prompt treatment, usually by dietary management, is necessary to prevent MR when inborn disorders such as galactosemia, hypoglycemia, phenylketonuria (either in the infant or the mother), homocystinuria, and maple syrup urine disease occur in the newborn. Investigators have reported a number of new findings in mongolism. These include apparent associations of autoimmune disorders, low serotonin levels, and the Australian antigen with Down's syndrome. Many perinatal factors such as intrauterine infection, diabetes in the mother, and insufficient oxygen supply to the fetus may cause MR. Other factors include low birth weight, neonatal seizures, physical trauma, and emotional deprivation. A large number of syndromes have been related to MR, although the individual incidence of each is low. Early identification can guide the pediatrician in possible treatment procedures and in family counseling. By routinely studying family history conducting careful physical examinations, and appraising the developmental stage, the pediatrician can frequently determine if further evaluation is necessary. Many laboratory procedures are available for this purpose, some routine, others highly specialized. The increasing use of prenatal amniocentesis is providing more opportunities for prophylactic approaches to prevent the development of MR, and while no drugs have shown convincing utility in improving intelligence of the MR, a number of replacement therapies can ameliorate specific metabolic syndromes and improve certain symptoms. The pediatrician must also concern himself with other aspects of MR, including the provision of advice and support to the family in terms of the emotional problems associated with the disorder and recommendations concerning institutional placement when indicated. Prevention of MR must occupy an in-

creasing proportion of the future efforts in this field. (166 refs.) - *M. S. Fish.*

779 **RUTTER, MICHAEL L.** Psychiatry. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 11, p. 186-221.

A summary of the associations between intellectual retardation (a psychometric concept) and psychiatric disorders of children is important since previous reviews have dealt principally with the clinical diagnosis of mental subnormality or mental deficiency, which are administrative concepts with legal implications. The fact that many institutionalized individuals classified as mentally subnormal actually have normal intelligence emphasizes the need for appropriate distinctions. Currently employed definitions of mental retardation or deficiency would include many individuals in the average range of functioning. Determination of social incompetence is meaningless without reference to the circumstances which require adaptation, and, therefore, is a poor criterion to utilize in ascertaining MR. IQ tests, when properly standardized and administered, are objective and valid measures of intellectual status, despite a number of difficulties in and objections to their use; consequently, they are a practical convention for the classification of intellectual retardation. That psychiatric disorders occur at a high rate among the intellectually retarded is well recognized. A comprehensive study on the Isle of Wight has borne out findings of other epidemiological investigations that deviant behavior occurs more frequently among children of low IQ than those of high IQ. The studies also indicate that a wide range of psychiatric disorders is involved, thus causing difficulty in determining a mechanism to account for the association. While neurotic disorders can impair intellectual performance, they apparently do not cause deterioration in intelligence. The reverse probably obtains: factors associated with low IQ lead to psychiatric disorders. Organic brain dysfunction or brain malfunction are associated with psychiatric disturbances, probably because of an interfering effect upon the remainder of the nervous system. Low IQ appears to be associated with social rejection, and deviant temperamental attributes appear to relate to both psychiatric disorders and impaired intellectual performance. Physical handicaps and educational failure are other factors which interact in this association; however, organic brain dysfunction and deviant temperamental attributes seem to be the 2 most important ones. Specific psychiatric syndromes and symptoms which occur more frequently among intellectually retarded children are infantile autism, disintegrative psychosis, hyperkinetic syndrome, stereotyped repetitive movements, and pica. Certain personality characteristics are associated with such medical conditions as Down's syndrome, phenylketonuria, hydrocephalus, epilepsy, and brain damage. (296 refs.) - *M. S. Fish.*

780 **BENCH, JOHN; & PARKER, ANNE.** On the reliability of the Graham/Rosenblith behaviour test for neonates. *Journal of Child Psychology and Psychiatry,* 11(2):121-131, 1970.

The original Graham behavior test and several modifications (Rosenblith; Bench-Parker) gave similar degrees of interobserver reliability in newborns. This type of test attempts to predict the probability of subsequent development of abnormalities. Light sleep or mild activity is the preferable state during testing. Each child was tested with 4 parameters: maturational level, visual response, irritability, and muscle tension; the original test also used pain threshold. The Bench-Parker modification of this test used a retest after 4 hours instead of after 24 hours. (10 refs.) - *E. Kravitz.*

Royal Berkshire Hospital
Reading, England

781 **HOOPER, P. D.** Screening for developmental defects. *British Medical Journal,* 2(5710):671, 1970. (Letter)

Well-baby screening for developmental defects should be coordinated nationally through a conference of those in the Health Service branches concerned with the development of national policy on this question. A generally useful, clear and concise proforma should be developed for local use and should indicate the specific tests to be administered, including the suggested timing of such tests and other details of the necessary immunization program. Those already involved in developmental pediatrics are in the best position to take the lead in these activities. (2 refs.) - *N. Mize.*

Newport
Isle of Wight, England

782 **KAPPELMAN, MURRAY M.; & GANTER, ROBERT L.** A clinic for children with learning disabilities. *Children*, 17(4):137-142, 1970.

The goals of the multidisciplinary Learning Disability Clinic for children at Sinai Hospital in Baltimore (Maryland) include: providing a thorough assessment of each child seen with serious learning problems; maintaining continuing contact with the child to observe progress and adjust treatment; providing a medium for training hospital, school and community service professionals about learning disabilities; alerting the community to signs of school problems in young children; and exploring the less well-known aspects of etiology and remediation of learning disabilities. The clinic conducts studies of prenatal histories, of the effects of behavior modification on learning ability of the hyperactive child, and of the effects of various drugs on specific disabilities. Eligible children suffer from one or more learning disabilities, chiefly minimal brain injury (both hyperkinetic and autistic types), perceptual dysfunction, and central communication disorder. Each child seen is assessed by a pediatrician, clinical psychologist, psychiatric social worker, speech and hearing specialist, psychometrician, social work assistant, and experimental psychologist. (4 refs.) - *N. Mize.*

Sinai Hospital
Baltimore, Maryland

783 Raising questions of taste — and finding answers. *Medical World News*, 11(46):18-19, 1970.

Taste testing may become a worthwhile diagnostic aid for many genetic and metabolic conditions, and oral trace-metal therapy has been helpful in taste abnormalities. Two young males with aglycogeusia demonstrated a concomitant hypoparathyroidism possibly transmitted as a genetic (recessive) autosomal defect. Both taste and smell have not been adequately investigated. The classic concept that taste is limited to the tongue is not warranted; the palate, pharynx, and larynx are also involved. Chemically important factors include trace metal ions, such as copper, nickel, zinc, and thiols in dynamic balance, and carbohydrate-active steroids. A chart classifies a number of disorders of interest to MR researchers in terms of associated increased or decreased taste sensitivity, or specific alterations in sensitivity. (No refs.) - *E. Kravitz.*

784 Tooth defects and mental retardation. *Nursing Mirror*, 131(5):26, 1970.

A blind study comparing the dental casts of 181 MR patients from the Polk State School and from the Elwyn Institute in Pennsylvania with the casts of 260 normal children revealed that 74 percent of the mongoloids, 46 percent of the brain-damaged children, and 54 percent of the culturo-familial retardates had one or more abnormally shaped teeth, whereas only 8 percent of the normal population had such tooth abnormalities. In mongolism the canine is the most frequently malformed tooth, while it is the first molar in the brain-damaged and culturo-familial groups. Specific tooth defects may indicate the time that genes or an environmental insult began to interfere with both mental and tooth development. It is conceivable that tooth defects noted in young children might help detect latent brain damage. (No refs.) - *J. C. Moody.*

785 **CRAIG, WILLIAM S.** Detecting neonatal morbidity. *Nursing Mirror*, 131(3):13-15, 1970.

The primary purpose of the visiting nurse's supervision of newborn infants at home is to ensure early detection of handicaps through organized prospective periodic examination. Immigrant families are in particular need of support and understanding. Minor abnormalities that may not be observed until after leaving the hospital include fat necrosis, sternomastoid tumor, strawberry naevi, inguinal hernia, and congenital laryngeal stridor. In babies with hemolytic disease or hyperbilirubinemia, prompt detection of a return or aggravation of severe anemia is extremely important. Other conditions to be watched carefully are bleeding from the umbilical cord, alimentary disturbances (particularly vomiting), and convulsions. The visiting nurse should also be on the alert for signs of infection such as oral thrush, skin pustules, paronychia, and staphylococcal conjunctivitis. Before sending an infant home, the maternity hospital has a responsibility to provide details of any minor or major infection to which the baby has been exposed, but even so it is often difficult to pinpoint the precise source of infant infections. (No refs.) - *J. C. Moody.*

No address

786 Intra-uterine detection of hereditary metabolic disorders. *Nursing Mirror*, 130(7):32, 1970.

Intrauterine detection of metabolic disorders in the fetus is done by withdrawing a small quantity of amniotic fluid through a needle inserted through the abdomen into the uterus during the third or fourth month of pregnancy. Conditions which can be diagnosed include Down's syndrome, Klinefelter's syndrome, galactosemia, Pompe's disease, maple syrup urine disease, hypocatalasemia, cystinosis, and Marfan's syndrome. If a disorder is found, one may begin early treatment of the disease, terminate the pregnancy, or take no action. (No refs.) - *M-E. Sayre.*

787 Foetal blood sampling: Clinical application. *Nursing Mirror*, 130(10):27-29, 1970.

A filmstrip photographed at King's College Hospital, London, is concerned with the indications and methods for collecting fetal blood samples after labor has begun. The indications include an irregular fetal heart rate (rate of > 160 or < 120 beats/minute), or appearance of meconium in amniotic fluid, "small for dates" baby, and pre-eclamptic toxemia. Through a series of illustrations and captions, the technique for drawing blood samples from the top of the baby's head as he presents before birth is explained. A test for pH is performed on the blood sample from the baby and, if necessary, one from the mother, and the results recorded. The incision on the baby's scalp is usually well healed by 3 days of age. (No refs.) - *M-E. Sayre.*

788 Foetal blood sampling: The technique. *Nursing Mirror*, 130(9):26-27, 1970.

The technique of taking fetal blood for examination prior to birth is described and depicted by photographs taken from a filmstrip. An endoscope is used to visualize the fetal scalp, and disposable blades are used to make an incision in the scalp. Capillary blood is collected in a glass tube. The technique is shown, through use of a model, in a series of six pictures. (No refs.) - *M-E. Sayre.*

789 **SCHWARTZ, EDWARD M.** The perceptually-handicapped child: An overworked concept? *Clinical Pediatrics*, 9(5):255-256, 1970.

The concept of perceptual handicap which is being applied to a wide spectrum of problems, is not appropriate in some cases. In a 3-month period, 18 "perceptually handicapped" children (CA 6 to 18 yrs) were referred for evaluation. Of these, only 3 exhibited "hard" or "soft" neurological signs; 6 had low intelligence (60 to 85); 4 had problems chiefly interpersonal in nature and affecting the children's learning processes; 5 had milder emotional or social problems. After the screening, only the 3 having neurological signs were considered perceptually immature or handicapped in the sense that, while they have intact over-all intelligence and sensory-motor mechanisms, they are immature in some visual-perceptual and perceptual-motor integrative functionings. It is important to recognize factors other than specific learning disability which affect many children, especially since children having low intelligence or interpersonal problems often suffer from immaturity which is secondary to the basic difficulty. (No refs.) - *M-E. Sayre.*

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790 **HARCOURT, BRIAN.** Electroretinography and the diagnosis of tapeto-retinal degenerations in childhood. *Developmental Medicine and Child Neurology*, 12(6):775-780, 1970.

Electroretinographic measurement during childhood is frequently a useful and reliable diagnostic tool for early recognition of a number of different forms of tapeto-retinal degeneration. These disorders represent degeneration of once normally-developed tissue due to an inherited defect. They may occur as primary defects or as part of a number of defects associated with inherited systemic neurologic disorders or with certain inborn errors of lipid metabolism. MR may be associated with the defect in a number of these, such as Laurence-Moon-Biedl-Bieder syndrome, Hallgren's syndrome, Spielmeyer-Vogt disease, and, occasionally, Bassen-Kornweig syndrome. The technique is of particular value in: diagnosing symptoms of defective vision of uncertain cause; diagnosing earlier stages of primary pigmentary retinopathies; and differentiation of primary and secondary retinopathies. Since response to the electroretinogram represents mass response of all elements of outer retinal layers, the technique may not be sufficient to diagnose lesions which affect only a small portion of these elements or to determine a defective ganglion cell, a nerve fiber layer of the retina, an optic nerve disorder, or optic radiations of the visual cortex. (1-item bibliog.; 5 refs.) - *M. S. Fish.*

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Leeds 1, England

791 **SHAW, J. F.** Complications of neurological diagnostic procedures. *Developmental Medicine and Child Neurology*, 12(6):793-797, 1970. (Annotation)

Because of the wide variety of procedures available for neurological diagnoses in children, proper selection, use, and interpretation are essential, and expert evaluation of their possible long-term effects should be made. The 2 most widely used techniques (cerebral angiography and lumbar pneumoencephalography) are generally quite safe if properly chosen and expertly performed. The use of these and other procedures such as X-rays, lumbar puncture, electroencephalography, echoencephalography, cerebral isotope scanning, ventriculography, subdural aspiration, and brain biopsy, all require careful selection with knowledge of specificity or appropriateness of the procedure, the possibilities of delayed disabilities caused by the investigation, risk and discomfort to the patient, and expense. Certain procedures may be more appropriate for the child than for the adult, and, since they are performed on a developing nervous system, the possible risk of long-term effects must be carefully considered. (13 refs.) - *M. S. Fish.*

Western General Hospital
Edinburgh, EH4 2XU, Scotland

792 **ENGEL, ERIC.** Studies from the hair. *Lancet*, 2(7671):526, 1970. (Letter)

A recent report on the use of hair-root cells for direct chromosome preparations emphasizes the important potential of hair cells for other genetic and metabolic studies. Actively dividing cells of the germinal matrix of the bulb and the epidermal cells of the external sheath of the follicle both have potential use in somatic cell genetics. Studies of hair roots have already provided information in areas of malnutrition and albinism and likely will be useful in investigations of such disorders as hyperuricemia and mucopolysaccharidoses, and in the determination of sex-chromatin patterns. New staining techniques for fluorescent visualization of human Y chromosomes may, by use of hair roots, aid in the fast detection of Y chromosomal patterns. (15 refs.) - *M. S. Fish.*

School of Medicine
Vanderbilt University
Nashville, Tennessee 37203

MEDICAL ASPECTS – Prevention and Etiology (General)

793 **WILLSON, J. ROBERT.** Health care for women: Present deficiencies and future needs. *Obstetrics and Gynecology*, 36(2):178-186, 1970.

Drastic changes in training and practice of obstetricians and gynecologists (ob/gyn) are required if women are ever to have adequate health care. Deficiencies in such care and in family planning are eloquently attested to by maternal deaths (50% being potentially avoidable), perinatal mortality, premature births, illegitimate pregnancies, increasing venereal disease, and fatal cervical carcinomas (12,000 plus each year). In addition to changes in ob/gyn education and practice, a possible solution is the use of trained nonphysician associates. Group practice (2 or more ob/gyn's working together) provides care with greater efficiency for more women and permits various patterns of multispecialty groups. Education must design programs which take advantage of hospital and university departmental strengths in unified programs utilizing the strengths of each unit. Changes in practice must encompass the hospital, the office, prenatal care, and the periodic examination. Money alone will not solve the problem, for care available to upper- and middle-class patients is frequently inferior to that provided by residents in well-run clinics. What is imperative is quality control, which must be built into all new plans. (No refs.) - *B. Berman.*

University of Michigan Medical Center
Ann Arbor, Michigan 48104

794 **GIBBS, C. E.** Labor, delivery, and perinatal death. *Texas Medicine*, 66(4):87-89, 1970.

A study of 18,526 infants weighing more than 1,000 gm showed 393 perinatal deaths, of which 57 demonstrated favorable conditions when labor began and might have been prevented by judicious use of modern treatments. Fourteen died soon after birth; the remainder were stillborn. There were no significant medical and antepartum obstetrical complications. Post-mortems revealed such causes as anoxia, dystocia, cord obstruction, uterine rupture, post-date pregnancy, infection, and various entanglements. Twenty-four died of unknown causes. In no case was anesthesia directly involved. Fetal monitoring is important in preventing many such deaths. (1 ref.) - *B. Berman.*

University of Texas Medical School
San Antonio, Texas 78229

795 **OSOFSKY, HOWARD J.; NESBITT, ROBERT E. L., JR.; & HAGEN, JOHN H.** High-risk obstetrics: IV. Estrogen/creatinine ratios in routine urine samples as a method of screening a high-risk obstetric population. *American Journal of Obstetrics and Gynecology*, 106(5):692-698, 1970.

Single-specimen estrogen/creatinine ratios in 392 urinary specimens from 84 high-risk pregnant adolescents (CA range 12-20 yrs) closely approximated those previously found in forty-two 24-hour urinary estriol specimens from 16 similar Ss (with ratios plotted by week of gestation being almost identical in direction and slope). To ensure accurate collection of specimens, participation was voluntary, with intensive antenatal care. Despite all precautions, only 25% of the 24-hour collections were accurate; these showed that young age (when there are no complications) is not, *per se*, associated with any placental-fetal steroidal function and relations; hormonal excretion patterns were within the expected range. In the young and the mature, a normal intrauterine environment will yield favorable excretion levels. Since endocrine screening in high-risk groups is impracticable because of the complex laboratory procedures and unpredictable cooperation of Ss, simple spot checks of urinary estrogen/creatinine ratios may be used in screening. If a value thus obtained is grossly abnormal, 24-hour collections should be obtained. (28 refs.) - *B. Berman.*

State University of New York
Albany, New York 12203

796 **HOLDAWAY, M. D.** Some common causes of intellectual handicap. *Qawwi Qalbek*, II:II-13, 1970.

The etiology of about 50% of the cases of MR cannot be identified. Among the identifiable causes are hereditary factors, defects in chromosome patterns, abnormalities in the formation of the child, maternal illness, damage to the child during birth, and damage during childhood. It is most important for diagnosis to occur as soon as possible after birth so that appropriate remediation and/or training can be initiated. (No refs.) - *J. K. Wyatt.*

No address

797 **SEELIG, MILDRED S.** Are American children still getting an excess of vitamin D? Hyperreactive children at risk. *Clinical Pediatrics*, 9(7):380-383, 1970.

The amount of vitamin D necessary to prevent rickets in some infants may be toxic to those who are hyperreactive to it and lead to infantile hypercalcemia or the congenital supravalvular aortic stenosis syndrome of which MR is a part. The supplementation of each quart of milk with 400 units of vitamin D may provide an excess to the child who receives the vitamin from other sources including exposure to sunshine. Ideally an individual response to vitamin D should be determined early in infancy and the delivered potency of 400 units in milk should be reinvestigated. (44 refs.) - *E. L. Rowan.*

Schering Corporation
Bloomfield, New Jersey 07003

798 **KUSHNICK, T.** Who is mentally retarded? *Clinical Pediatrics*, 9(12):23A, 1970.

An infant boy was evaluated for failure to thrive and delayed motor development. He was noted to have a peculiar facies and multiple malformations. However, after surgical correction of obstructive

uropathy and antibiotic control of urinary tract infection, the patient showed excellent mental development. Predictions that he was MR were premature and erroneous. (No refs.) - *E. L. Rowan.*

New Jersey College of Medicine and Dentistry
Jersey City, New Jersey

799 Why is birth defect on rise in Canada? *Medical World News,* 11(42):28p, 1970.

Reduction deformity of the limbs is a congenital anomaly which has shown steady increase in Canada. The rate increased from 35.8 per 100,000 live births in 1966 to 55.7 per 100,000 in 1969. There was a cluster of deformed infants born in Alberta during the first 6 months of 1969. Thus far no etiology has been determined. Abortuses are being studied as an early warning measure because the adverse effect, if any, is temporally closer and may be more easily remembered or recognized. A surveillance system is also under development where all anomalies in the country will be described and recorded. (No refs.) - *E. L. Rowan.*

800 **ROSSI, ALBERT O.** Genetics of higher level disorders. *Journal of Learning Disabilities,* 3(8):387-390, 1970.

Since a child inherits his basic personality structure and biochemical idiosyncrasies, an analysis of parental and familial disabilities may be predictive of educational handicaps. Dyslexia may be an autosomal dominant disorder. Developmental speech disorders, stammering, and congenital auditory imperception also appear in familial clusters. Innate handedness appears genetically determined, but early social pressure to conformity makes such a determination difficult. It is hypothesized that learning disabilities result from steroid insufficiency and subsequent impairment of protein synthesis at the level of DNA transcription and that early chemotherapy might prove fruitful. (16 refs.) - *E. L. Rowan.*

Mountain Rd.
Bloomingburg, New York 12721

801 **BENSEN, J. F.; CLOPPER, D. L.; TRUSS, C. V.; & RUSSELL, M. B.** Prevention, not remediation of infant learning deficits. *Journal of Learning Disabilities,* 3(8):396-399, 1970.

The Florida Parent Education Program will attempt to train parents-to-be in methods of providing discrete stimulation and motivational patterns which will prevent the learning deficits now seen in disadvantaged children. A semester-length course for high school students will provide information on teaching the nonverbal infant and understanding preschool development. Such stimulation and motivation will enable the next generation to achieve educational equality. (10 refs.) - *E. L. Rowan.*

University of Miami Speech and Hearing Clinic
Coral Gables, Florida 33124

802 La prevention des inadaptations pendant la grossesse et a la naissance (The prevention of mental deficiency during pregnancy and birth). *Nos Enfants Inadaptes,* 33(1):5-7, 1970. (Interview with Professor Minkowski)

Since 50% of handicapped children is the result of insufficient medical supervision during pregnancy or errors during delivery, the prevention of the risks involved therein is of the utmost importance. Attention should be paid, in particular, to mothers below 16 and above 40 years of age, to small-for-date infants, and to pregnancies extending for more than 43 weeks. Urinary infection and elevated blood pressure are important danger signals. High-speed automobile travel should be avoided during pregnancy, especially during the second and third and fifth and sixth months, as it may lead to premature births — one of the many causes of MR. Women whose heart does not present any enlargement after 5 or 6 months of pregnancy are prematurity risks and should be kept in bed until their pregnancy is terminated. Pre-pregnancy vaccination should not be overlooked as a preventive measure. The rhesus factor should be checked. Delivery should take place in a good, well-equipped maternity ward. Artificial induction of labor is generally to be avoided. Finally, care should be exercised in transferring the child from the clinic to the reanimation center. (No refs.) - *K. Baer.*

803 **MEDNICK, MIRIAM F.** Prevention of mental retardation: Social work in maternal and infant care programs. *Child Welfare,* 48(9):552-556, 1969.

MR can be prevented in part by social workers, who can play a role in the primary prevention of problems during pregnancy and in secondary prevention after the birth by seeking and assisting in medical care for hazardous health and social conditions. The connection between poverty and prematurity, on the one hand, and between prematurity and MR, on the other, has been shown. In order to maximize the utilization of screening, the social worker must employ effective techniques in the first interview with a woman, and she must identify herself as a worker whose emphasis is on assistance with economic and emotional problems and with interpretation and implementation of medical recommendations. Investigation of the reality factors in the plans of the patient, plans for the older children during the delivery, and problems created by the pregnancy is an essential part of her task. Following the birth, identification and follow-up of children who suffered from anoxia, neonatal infections, and respiratory distress syndrome and who manifested borderline abnormal neurological findings and low Apgar scores are vital. The combination of prenatal and postnatal activity on the part of the social worker can be a valuable aid in the prevention or amelioration of MR. (5 refs.) - *B. J. Grylack.*

Philadelphia Board of Education
Philadelphia, Pennsylvania

804 **PAPP, Z.; GARDO, S.; HERPAY, G.; & ARVAY, A.** Prenatal sex determination by amniocentesis. *Obstetrics and Gynecology*, 36(3):429-432, 1970.

Determination of sex prenatally by analysis of sex chromatin content of fluid obtained by amniocentesis can provide a useful procedure for selection in cases of sex-linked hereditary diseases. Sex chromatin analyses were performed on amniotic fluid obtained transvaginally from 100 early pregnancies and transabdominally or transcervically from 20 late pregnancies. All early pregnancies were cases in which the women had requested legal interruption of gravidity between the eighth and twenty-first weeks. No complications resulted from the transvaginal procedures. Comparison of the percentage of chromatin-positive cells in the fluid (up to 4% for males and 12-26% for females) with actual sex of the fetus, as determined visually or by the percentage of sex chromatin found in embryonal or placental cells, indicated that the procedure is useful only after the twelfth week of pregnancy at which time sufficient cells suitable for analysis are found. The results suggest that when investigation of the sex of the fetus is indicated and interruption of the pregnancy may be desirable, transvaginal amniocentesis between the fourteenth and sixteenth week of pregnancy is suitable for prenatal selection. (20 refs.) - *M. S. Fish.*

University Medical School
Debrecen 12, Hungary

805 **WILLIS, TANNA.** Monitoring the mother and fetus during labor. *Canadian Nurse*, 66(12):28-31, 1970.

A unit which provides intensive perinatal care for monitoring the mother and fetus promises to be effective in the reduction of maternal and perinatal mortality and morbidity. The fetus is monitored during labor by means of a polyethylene catheter, inserted vaginally into the amniotic sac, for measuring uterine activity. Fetal heart rate patterns are obtained by means of a fetal electrode placed on the presenting part *in utero*, and fetal blood, obtained by an amnioscope also inserted through the vagina, is measured for pH. Although fetal distress may sometimes be difficult to determine, irregularity or slowing of the fetal heart rate and abnormal fetal movements may be indicative, as may be a change in the blood pH. It is particularly important that high-risk pregnancies be recognized early and monitored throughout labor and delivery. Experience gained over an 8-month period with 170 high-risk pregnancies indicates that the use of this intensive monitoring unit likely aided in the prevention of a number of stillbirths, neonatal deaths, and cases of fetal morbidity. Early recognition of fetal asphyxia may have prevented the later development of MR in several of the cases. (11 refs.) - *M. S. Fish.*

Royal Victoria Hospital
Montreal, Canada

806 **ROBERTSON, EVAN G.** Induction of labor. *British Medical Journal*. 3(5719):405, 1970. (Letter)

Amniotomy followed shortly afterward by intravenous Syntocinon infusion is a safe method of inducing labor in late pregnancy. Of 2,288 deliveries, 472 labors were thus induced with no

neonatal deaths directly attributable to the induction; 85% was delivered within 12 hours of induction; the longest induction-delivery interval was 37 hours. With careful selection of patients and timing of induction by experienced obstetricians, this method guarantees delivery on the same day as labor induction. (2 refs.) - *B. Berman.*

University of Newcastle-upon-Tyne
Newcastle-upon-Tyne, England

807 **WORTIS, JOSEPH.** Prevention. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 12, p. 222-234.

Proper application of knowledge now available could probably prevent about one-half of the cases of mental defects which now occur. This prevention is dependent on diagnosis of: inheritable defects before pregnancy, so that birth control can be practiced; inherited or acquired defects during pregnancy, to permit early treatment or a therapeutic abortion; and defects found at birth, affording the opportunity for prompt treatment. Women over 40, for whom the risk of bearing a mongoloid infant is high, may wish to prevent a pregnancy, as may those who carry, or whose husbands carry, diagnosable dominant gene conditions where one-half of the children will be affected. Recessive genes are transmitted to about one-fourth of the offspring. Others are sex-linked. The diagnosable genetic risks of this type are still rare, however. Exposure to radiation and a variety of medical conditions of the mother can also affect the development of the offspring. Amniocentesis is a diagnostic procedure which has been used increasingly to prevent neonatal jaundice and to determine whether the fetus has been infected by rubella virus, has a missing enzyme, or is a mongoloid. The list of anomalies detectable by this procedure is growing, and the increasing acceptability of preventive abortions makes possible early intervention in many such cases where natural abortion, which eliminates most defective fetuses, has not occurred. Other hazards which may adversely affect pregnancy and delivery include viral infections, administration of certain drugs, malnutrition, and prematurity. Early treatment such as thyroid administration in cases of cretinism and dietary control for phenylketonuria and other metabolic diseases can prevent or lessen the degree of later MR development in the infant. The lack of proper prenatal care, particularly among women of the lower socioeconomic groups, is a major contributing cause of the incidence of high-risk pregnancies which are not diagnosed early enough to permit proper management. Any approach to the improvement of health care delivery should place high emphasis on programs and procedures which will utilize existing knowledge and gain new insights into the prevention of MR. (42 refs.) - *M. S. Fish.*

808 The value of counting developmental anomalies. *Canadian Medical Association Journal,* 103(5):528-530, 1970. (Editorial)

A survey by the Canadian Department of Health and Welfare is described which attempts to detect, by surveying vital statistics records, any increase in anomalies among newborns. This may permit earlier definitive investigation of the possible presence of a teratogenic influence. Similar efforts in the United States and elsewhere are also noted. Embryo and fetus surveillance should complement surveillance in infancy for optimal value. The need for both national and local programs is indicated. (17 refs.) - *E. Kravitz.*

809 **FRIESON, RHINEHART F.** Prepregnancy care—a logical extension of prenatal care. *Canadian Medical Association Journal,* 103(5):495-497, 1970.

Prepregnancy care can have worthwhile preventive health value. Prenatal care misses the most critical period in the development of the embryo, the first 4-6 weeks. Proper prepregnancy care should include a complete history and physical examination to permit the establishment of baseline data and counseling. Genetic and other pathologic conditions can be evaluated, and an intended pregnancy may be reevaluated as contraindicated. Dietary instructions, immunizations, and dental care should be provided. The gradual discontinuation of contraceptive pills by using a nonhormonal contraceptive is suggested. All nonessential drugs should be discontinued; smoking might advantageously be discontinued. The employment situation should be evaluated. (No refs.) - *E. Kravitz.*

University of Manitoba
Winnipeg, Manitoba, Canada

810 Newborn care in perspective. *Canadian Medical Association Journal*, 103(13):1389, 1391, 1970. (Editorial)

Despite many technical advances during the past 25 years in caring for ill newborns, there has been little improvement in the morbidity and mortality rate of this population in western societies. The earlier isolation practices have been abandoned; babies are now handled freely. Special care nurseries now use sophisticated instruments for umbilical vessel catheterization, cardiac, respiratory, and central nervous system monitoring, and laboratory control of therapeutic regimens. There is improved cooperation between pediatrician and obstetrician for intrauterine diagnostic and therapeutic procedures. The number of children with physical, emotional, and learning problems is increasing; the need to improve the quality of life should receive increasing emphasis. This will probably require socioeconomic, nutritional, and educational improvements as well as increasing application of improved diagnostic and therapeutic measures. (No refs.) - *E. Kravitz.*

811 **BOYCE, R. M.; & OSBORN, R. W.** Therapeutic abortion in a Canadian city. *Canadian Medical Association Journal*, 103(5):461-466, 1970.

A small number of psychiatrists (5) was involved in most abortions performed for behavioral reasons (82) in London, Ontario, during 1962-1968; 119 therapeutic abortions were performed for all reasons during this period. One of the psychiatrists was particularly active in this sphere. London is predominantly Protestant. All of these abortions were performed at a single hospital. During the latter phase of this time period, the number of abortions (rate per unit of time) increased, behavioral reasons increased, and more unmarried and younger women underwent abortions. (4 refs.) - *E. Kravitz.*

University of Western Ontario
London, Ontario, Canada

812 **TOMKIEWICZ, S.; HAMMER, N.** Thoughts concerning the etiology of mental retardation, based on a recent investigation (Considerations sur l'etiologie de l'arrieration mentale a l'occasion d'une etude recent). *Femme et l'Enfant*, 2(4):27-46, 1970.

Statistical studies of 1,513 case histories of severe MR, excluding mongolism, treated at the Hopitaux de Paris (Assistance Publique), revealed the following etiologic breakdown: genetic causes (6%), intra-uterine causes (11%), prenatal causes (21%), postnatal causes (9%), and undetermined causes (28%). Lack of certainty in ascribing specific causes to several cases of MR, where a cryptogenic explanation did not seem appropriate, indicates that the field of etiologic research is still wide open. (No refs.) - *N. Mize.*

No address

813 **DANES, BETTY SHANNON.** Genetic counseling. *Medical World News*, 11(45):35-41, 1970.

The decline of infectious diseases has increased the importance of congenital defects and brought into prominence genetic counseling, an evolving medical discipline that is fighting a battle on numberless fronts (more than 1200 genetic diseases have been listed). For physicians, accustomed to fighting infections, it means drastically new ways of thinking. The physician must share his cases with experts and he must accept new ethical and moral challenges such as those implied in therapeutic abortion. The concept of genetic counseling goes back to Garrod, who, in 1908, described several "inborn errors of metabolism." It entered a new era following the development of the Salk and Sabin vaccines, which virtually eliminated polio and set the National Foundation on its exploration of birth defects. Amniocentesis in treating erythroblastosis fetalis, enzyme analyses of amniotic fluid, and skin-fibroblast cultures in the mucopolysaccharidoses brought genetic counseling to full bloom. Proposals for *in utero* diagnosis as a mass-screening method against congenital diseases have been met by cautious reminders of inherent dangers, as the PKU experience demonstrates (the special diet prescribed for elevated phenylalanine levels in PKU cannot be used for every child). Mass screening, however, is valuable when handled properly and the program carried out by the Massachusetts Department of Public Health State Laboratory Institute, using the Guthrie test for PKU, is providing a model. Research is active throughout the country, and special assistance for physicians is available from the National Genetics Foundation. (No refs.) - *B. Berman.*

No address

814 **DAY, ROBERT W.** Public programs to aid in prevention. *Mental Retardation/ MR*, 7(2):19-23, 1969.

A 7-state survey of all patients with persistent blood phenylalanine (PA) levels of 6 mg% or more and blood tyrosine of less than 5 mg% (complete data obtained on 122 families) revealed 2 groups, with Group I having PA levels of 20 mg% or more and Group II having PA levels of 19.9 mg% or less. Group I contained those who had classical PKU and would eventually be diagnosed; Group II contained "hyperphenylalanemics" – largely unrecognized prior to newborn blood screening. Wider application of this screening has increased detection of Group II individuals, since the usual signs (including MR) are not present, and has shown that elevated blood PA incidence is higher than estimated. Genetic analysis reflects homozygosity for an abnormal allele. Results show that a correlation exists between PA level and degree of MR, and early dietary treatment (before age 30 days) for Group I Ss prevents brain damage; Group II Ss develop normally with or without treatment. Generally, there is confidence in the initial test result (only a small proportion of initially positive infants require further follow-up). Further studies (which use epidemiological, genetic, clinical, biochemical, and enzymatic techniques) may suggest alternative methods; however, at present, newborn PA blood screening has provided the major public-program technique for preventing MR. (No refs.) - *B. Berman.*

University of Washington School of Medicine
Seattle, Washington 98105

815 **KIHARA, HAYATO.** The western states amniocentesis registry. *California Mental Health Research Digest*, 8(3):105-112, 1970.

Many genetically transmitted disorders can be diagnosed by examining small amounts of amniotic fluid taken during pregnancy by trans-abdominal amniocentesis. To use this method of detecting chromosomal abnormalities and metabolic disorders before birth, there is need for central laboratories or coordinated registries of facilities and a list of disorders diagnosable by this means. With the goal of helping to meet this need, a survey of centers in the western United States has been conducted and a registry produced listing their cytogenic or biochemical capabilities with contact address and telephone number. To date, 39 investigators from 16 centers are included; others are invited to participate. Mail and telephone contacts are used to minimize the need for family travel for examination and counseling. Through the use of the center's resources, some cases of MR and birth defects are being prevented. (No refs.) - *M-E. Sayre.*

Pacific State Hospital, Box 100,
Pomona, California 91768

816 **CORNER, BERYL.** Care of the newborn infant. *Nursing Mirror*, 131(2):20-22, 1970.

In this article are summarized the responsibilities of the nurse and midwife toward the newborn, along with proposed changes in training and administration designed to make them more competent in their roles. Fifty percent of newborns are "at risk" for reasons not always as obvious as prematurity. Without being removed from incubators, babies can be examined and tested for hypoglycemia, hypocalcemia, acid-base balance abnormalities, congenital metabolic disorders, jaundice, anemia and infection. Fetal and perinatal incidents implicated in etiology of deviations from the norm can be explored; for example, "minimal brain damage," some epileptic syndromes, and "the clumsy child" may result from intrapartum or neonatal asphyxia; other infants regarded as being "high risk" include those having uncooperative mothers (usually from the lower socioeconomic groups); those of short or prolonged gestation with birth weights much above or below the norm; those having respiratory disorders in the first 48 hours, and those having severe jaundice or hemolytic disease of the newborn. Among her other duties, the nurse must be able to recognize and manage these high risk factors, and especially be able to identify such problems as rubella and toxoplasmosis in pregnancy or the likely result of severe pre-eclamptic toxemia on the fetus and newborn. (No refs.) - *M-E. Sayre.*

Bristol University
Bristol, England

817 **CASAER, PAUL; & AKIYAMA, YOSHIO.** The estimation of the post-menstrual age: A comprehensive review. *Developmental Medicine and Child Neurology*, 12(6):697-729, 1970.

In the estimation of fetal postmenstrual (PM) age a combination of parameters, serially measured pre- and post-natally, provides the most helpful data; however, optimal accuracy of estimation ranges between ±2-3 weeks. The measurement of PM age is important for assessment of perinatal physiology and the evaluation of clinical risks to the fetus. To be of maximum value techniques for this measurement must meet the following criteria: measurement of a phenomenon which appears suddenly at a particular period of gestation; evaluation of a condition which does not alter in sick infants; ease of administration and reliability of results; and minimal risk to fetus, mother, and newborn. Evaluation of available techniques by these criteria has indicated that in prenatal life, ultrasonic measurement of biparietal diameter, cytological study of amniotic fluid, and fetal electrocardiography provide the most useful information; whereas, in postnatal life, 5 neurological tests (pupil reaction, traction, glabellar tap, neck-righting, and head-turning), physical-external characteristics of the skin, nerve conduction velocity, and electroencephalographic codes appear to be the most accurate measurements for determining PM age. (272 refs.) - *M. S. Fish.*

University Hospital
Groningen, The Netherlands

MEDICAL ASPECTS – Etiologic Groupings

Infections, intoxication, and hemolytic disorders

818 **FOY, HJORDIS, M.; KENNY, GEORGE E.; WENTWORTH, BERTINA B.; JOHNSON, WAYNE L.; & GRAYSTON, J. THOMAS.** Isolation of *Mycoplasma hominis*, T-strains, and cytomegalovirus from the cervix of pregnant women. *American Journal of Obstetrics and Gynecology*, 106(5):635-643, 1970.

An investigation of mycoplasmata, TRIC agent, and cytomegalovirus (CMV) in the cervices of pregnant women attending a prenatal clinic demonstrated *Mycoplasma hominis* (a usually harmless sporophyte, with occasional pathogenicity) in 33 of 199 cervical cultures, T-strains (T for tiny colony—an organism resembling mycoplasmata) in 56% of the Caucasians and 75% of Negroes, and CMV (a virus causing cytomegalic inclusion disease, sometimes lethal for the newborn) in 5 of 140 cultures (no infant showed the disease, although each was of lower than average birth weight and Apgar score). Isolation rate for *M. hominis* was 32% for Negroes and 16% for Caucasians. Of all who carried *M. hominis*, 92% showed T-strains (in no case did either organism damage the infant), and both organisms were found in infants of positive mothers. The *M. hominis* isolation rate (19%) in these Ss was much lower than the rate (48%) among women in a venereal disease clinic in Seattle, reflecting the higher incidence of mycoplasmata among promiscuous women. Contrary to reports of abortive effects of *M. hominis*, none was seen in the higher T-strain occurrence among Negroes and unmarried women. (27 refs.) - *B. Berman.*

University of Washington School of Medicine
Seattle, Washington 98105

819 **CZEIZEL, ANDREW; & JANKO, MARY.** An estimation of the incidence of toxoplasmosis during pregnancy. *American Journal of Obstetrics and Gynecology*, 106(5):776-779, 1970.

Administration of the Frenkel cutan test in Budapest to 942 nonpregnant women of varying ages provided an estimate of age-related incidence of toxoplasmosis infection from which could be determined the probability of toxoplasmosis infections in all pregnancies in the country (7.7/1,000 in the hazardous fourth-to-ninth-month interval). Since evidence from a literature survey indicated a fetal-injury expectancy in 25% of these women, it is estimated that, in 1967 in Hungary, congenital toxoplasmosis occurred in 286 neonates (2.0/1,000 of pregnant women). (15 refs.) - *B. Berman.*

National Institute of Public Health
Budapest, Hungary

820 **LERRO, S. J.** Epidemiologic overview of meningococcal infections in Texas, 1964-1968. *Texas Medicine,* 66(9):44-51, 1970.

Epidemiologic data on meningococcal infections in Texas (1964-68) revealed an increasing number of sulfadiazine-resistant strains and an urgent need to determine sulfonamide sensitivity and appropriate therapy for each patient and proper prophylaxis for contacts. Disease incidence declined steadily from infancy to advancing age, occurring generally in cold weather *via* the respiratory route, with proportionately more cases among Negroes and males in heavily populated urban areas. Mass prophylaxis for large, open institutions or schools is not justified, but immediate family contacts should receive a short sulfonamide course if the organism is sensitive to 1.0 mg/100 ml sulfadiazine. Penicillin is the choice when a large dosage is needed, but various sensitivities must be determined. Ampicillin, tetracycline, chloramphenicol, and erythromycin have been used successfully. Rifampin seems superior to other antimicrobial agents in eliminating meningococci from carriers. An experimental polysaccharide vaccine provides 90% protection against group C strains. (23 refs.) - *B. Berman.*

Texas State Department of Health
Austin, Texas 78756

821 **VEST, M.; SIGNER, E.; WEISSER, K.; & OLAFSSON, A.** A double-blind study of the effect of phenobarbitone on neonatal hyperbilirubinemia and frequency of exchange transfusion. *Acta Paediatrica Scandinavica,* 59(6):681-684, 1970.

Since premature infants are prone to develop hyperbilirubinemia, which requires exchange transfusion, phenobarbitone or placebo was administered to premature newborns hospitalized within 24 hours after delivery to determine its effect on serum-bilirubin concentrations and frequency of exchange transfusions. After 10 injections given at 8 hourly intervals to 56 treated Ss and 60 controls, one exchange transfusion for the treated Ss and 11 for the controls were required, reflecting a statistically significant difference. Beginning with the fourth day, treated Ss showed significantly lower serum-bilirubin concentrations than did the controls. (13 refs.) - *B. Berman.*

University of Basle
Basle, Switzerland

822 **LUNDH, BENGH; OSKI, FRANK A.; & GARDNER, FRANK H.** Plasma hemopexin and haptoglobin in hemolytic diseases of the newborn. *Acta Paediatrica Scandinavica,* 59(2):121-126, 1970.

Electroimmunodiffusion techniques were used to compare plasma hemopexin and haptoglobin concentrations in 39 newborn term infants, 27 premature infants, and 16 infants with glucose-6-phosphate dehydrogenase deficiency or a positive Coombs' test with or without evidence of hemolysis. The hemopexin levels were significantly lower in premature infants than in normal infants in confirmation of previous work. So few infants had demonstrable haptoglobin that comparisons were not significant. The hemopexin values were of no value in distinguishing these infants with or without hemolysis. (17 refs.) - *E. L. Rowan.*

University Hospital
Lund 5, Sweden

823 **HUTTUNEN, LEENA.** Adenovirus type 7 – Associated encephalitis. *Scandinavian Journal of Infectious Diseases,* 2(2):151-153, 1970.

Four siblings showed the same clinical picture of fever, headache, irritability, tiredness, markedly abnormal EEGs, and normal cerebrospinal fluid. All had associated pneumonitis. Recovery was complete in all cases with normalization of the EEGs. Adenovirus type 7 was recovered from 3 of the children and is the most probable cause of the encephalitis. (7 refs.) - *E. L. Rowan.*

University of Helsinki
Helsinki, Finland

824 **LIE, SVERRE O.; SKREDE, SVERRE; STEEN-JOHNSEN, JON; & FLUGSRUD, LIV.** Congenital rubella: Clinical immunological and virological studies on three cases. *Scandinavian Journal of Infectious Diseases,* 2(2):145-149, 1970.

Three cases of congenital rubella demonstrate a complexity of symptoms and a variety of clinical

pictures. Two showed intrauterine growth retardation, congenital heart disease, microcephaly, cataracts, and psychomotor retardation. The third showed only purpura and osteolytic bone lesions. Rubella virus was shed by all 3 for at least 3 months after birth, and antibodies and immunoglobulins were elevated. (19 refs.) - *E. L. Rowan.*

Rikshospitalet
Oslo, Norway

825 **STERNER, GORAN; AGELL, BENGT-OLOF; WAHREN, BRITTA; & ESPMARK, AKE.** Acquired cytomegalovirus infection in older children and adults. *Scandinavian Journal of Infectious Diseases,* 2(2):95-103, 1970.

Almost all Swedes show antibodies to cytomegalovirus (CMV) by the time they are 65, and the infection is usually thought to be asymptomatic; however, 17 patients were hospitalized for severe CMV infections. In 14 of these cases, there were both a rise in complement fixing antibodies against CMV and isolation of the virus, and in 3, the virus alone was isolated. The illness was characterized by a severely high and prolonged fever, at least one abnormal liver function test, and hypoalbuminuria. Many cases were clinically similar to angiose and typhoid types of infectious mononucleosis. All patients recovered without sequelae. (23 refs.) - *E. L. Rowan.*

Danderyds sjukhus
S-182 03 Danderyd, Sweden

826 **MOSHKOWITZ, ABRAHAM; YATZIV, SHAUL; RUSSELL, ALEX; ABRAHAMOV, ABRAHAM; & NISHMI, MOSHE.** Echovirus types 4 and 9 in an outbreak of aseptic meningitis in Jerusalem. *Scandinavian Journal of Infectious Diseases,* 2(2):87-93, 1970.

Fifty-four cases of aseptic meningitis were hospitalized during an epidemic in Jerusalem in 1968 with echovirus type 4 isolated from 35 and echovirus type 9 from 8. Fever, headache, meningeal signs, and vomiting were the most common presenting symptoms. Thirteen patients with milder illnesses also yielded echovirus—11 had type 4 and 2 had type 9. Pleocytosis of the cerebrospinal fluid was the only outstanding laboratory finding. Treatment was symptomatic, and all patients recovered without sequelae. This was the first reported epidemic of echovirus type 4 in Israel. (43 refs.) - *E. L. Rowan.*

Bikur Holim General Hospital
Jerusalem, Israel

827 **VESIKARI, TIMO; KAUPPINEN, MARTTI A.; & VAHERI, ANTTI.** A two-year follow-up of rubella antibodies in a female population with special reference to reinfections. *Scandinavian Journal of Infectious Diseases,* 2(2):81-85, 1970.

Rubella antibodies in the sera of 122 women were followed over a 2-year period. Of the 17 women who were initially seronegative, 4 showed conversion as determined on hemagglutination inhibition (HI) titer, complement fixation (3) and platelet aggregation titer. An additional 4 showed a large increase only in HI titer. None of the latter Ss had clinical infections. In half the group, the HI titer was stable over the 2 years and in no case did it become negative. Further contact with virus antigen and localized virus multiplication is likely. (20 refs.) - *E. L. Rowan.*

University of Helsinki
Helsinki 29, Finland

828 **SALMI, AIMO; HALONEN, PEKKA; KOUVALAINEN, KAUKO; & ROSSI, RISTO.** Age-specific attack rate in females during a rubella epidemic. *Scandinavian Journal of Infectious Diseases,* 2(2):77-80, 1970.

Immunity to rubella was determined in groups of females from age 6 to 35 years in Turku, Finland, before and after a rubella epidemic. Of the 298 females in the pre-epidemic sample, 198 (66%) had a positive hemagglutination inhibition test and were, therefore, immune while the post-epidemic survey showed 293 of 351 (83%) immune. The highest infection rates among susceptibles occurred in the 17-22 age group (58%) and 10-12 age group (50%). Only 23% of the susceptible 6-8 age group converted. (18 refs.) - *E. L. Rowan.*

University of Turku
Turku 3, Finland

829 **BAKKEN, ARNE F.** Bilirubin excretion in newborn human infants: I. Unconjugated bilirubin as a possible trigger for bilirubin conjugation. *Acta Paediatrica Scandinavica*, 59(2):148-152, 1970.

Serial blood studies in full-term (N=10) and premature (N=25) infants and 25 infants with erythroblastosis fetalis were used to determine the pattern of bilirubin conjugation. Conjugated bilirubin was never demonstrated before unconjugated bilirubin was already in circulation; however, heavily Rh-immunized infants had both present at birth. A certain level of unconjugated bilirubin for a certain period of time is apparently necessary to trigger activation of the enzyme bilirubin-VDP-glucuronyl transferase in order to conjugate bilirubin, and this may occur after birth or *in utero*. (25 refs.) - *E. L. Rowan.*

Rikshospitalet
Oslo, Norway

830 **BAKKEN, ARNE F.** Bilirubin excretion in newborn infants: II. Conjugated bilirubin as a possible trigger for bilirubin excretion. *Acta Paediatrica Scandinavica*, 59(2):153-156, 1970.

Serial blood studies and urinalyses in full term (N=10) and premature (N=25) infants and 25 infants with erythroblastosis fetalis were used to determine the pattern of bilirubin excretion. The accumulation of conjugated bilirubin appears to trigger its own excretion, and a certain combination of concentration and time appears essential before excretion is possible. Both liver cell and kidney excretion factors appear to be involved. (13 refs.) - *E. L. Rowan.*

Rikshospitalet
Oslo, Norway

831 **ACHTEL, ROBERT A.** Recurrent bacteremia following ampicillin treatment of hemophilus influenzae meningitis. *Acta Paediatrica Scandinavica*, 59(2):211-213, 1970.

An infant with meningitis due to *Hemophilus influenzae* type B showed initial good response to 12 days of intravenous ampicillin therapy but had recurrent bacteremia 8 days after it was discontinued. Fluid recovered from a subdural tap was found to contain organisms. Reinfection probably resulted from residual focal sequestration of organisms despite the adequate antibiotic levels in the cerebrospinal fluid. A thorough search for such foci must be conducted when adequate treatment unexpectedly fails. (11 refs.) - *E. L. Rowan.*

Yale University School of Medicine
New Haven, Connecticut 06510

832 **BERGSTRAND, C. G.; & NILSSON, KARL OLOF.** Neonatal meningitis caused by *Salmonella Thompson*. *Acta Paediatrica Scandinavica*, 59(4):427-431, 1970.

A case of neonatal meningitis caused by *Salmonella Thompson* was identified in a 10-day-old female. Since a relapse occurred after 1 month of treatment, treatment was continued for 3 months. The child was sensitive to several antibiotics and sulfonamide. Ampicillin and oxytetracycline were used during the first 6 days of treatment. Oxytetracycline was then exchanged for chloramphenicol. The relapse which occurred 4 days after treatment was stopped suggests that duration of treatment may have been too short. There was no evidence of an antibody deficiency syndrome which might explain the relapse. Antibody titers did not reach very high levels during the course of the disease. The Widal test was completely negative 2 years after the infection and the patient appeared quite normal. (15 refs.) - *J. K. Wyatt.*

Malmo Allmanna Sjukhus
214 01 Malmo, Sweden

833 **FELSHER, BERTRAM F.; RICKARD, DAVID; & REDEKER, ALLAN G.** The reciprocal relation between caloric intake and the degree of hyperbilirubinemia in Gilbert's syndrome. *New England Journal of Medicine*, 283(4):170-172, 1970.

An inverse relation between caloric intake and level of serum bilirubin was observed in 12 diet studies performed on 7 patients with Gilbert's syndrome. There was a consistent abrupt rise in serum unconjugated bilirubin within 24 hours after the beginning of a brief fasting period

which was significantly reduced within 12 to 48 hours after high caloric intake was resumed. Eight normal control Ss evidenced small increases of serum bilirubin during a fasting period. Three of 6 nonicteric relatives of one patient with Gilbert's syndrome displayed distinct elevations in serum bilirubin during a 48-hour fast. A diet study accompanied by high doses of phenobarbital was performed on one patient and resulted in the prevention of starvation-induced hyperbilirubinemia. The commonly observed fluctuations in serum bilirubin in Gilbert's syndrome may be due to the relation between caloric intake and hyperbilirubinemia. (6 refs.) - *J. K. Wyatt.*

University of Southern California
School of Medicine
Los Angeles, California 90031

834 **HILDEBRAND, D. C.; KOIRTYOHAHN, S. R.; & PICKETT, E. E.** The sampling-boat technique for determination of lead in blood and urine by atomic absorption. *Biochemical Medicine,* 3(6):437-446, 1970.

The sampling-boat technique provides a rapid, precise method for the analysis of lead in blood and urine by atomic absorption. Although preliminary treatment of urine prior to analysis is not required, whole blood samples require the addition of 4 ml of 10% trichloroacetic acid per ml, a waiting period of 45 to 60 minutes, centrifusion at 2,000 rpm for 5 minutes, and analysis of the supernatant liquid. Urine analysis requires 0.5 ml for each measurement, while as little as 0.25 ml of normal blood can be analyzed. Analysis of a standard lead solution produces a signal which appears as a sharp peak and quickly returns to base line, a process which requires about 2 seconds. The urine signal is a sharp peak followed by a gradual tailing-off as the signal approaches the base line. Repeated analysis of several samples to determine precision yielded an average relative standard deviation of ±6.0%. Average recovery in standard addition experiments was 97%. (16 refs.) - *J. K. Wyatt.*

University of Missouri
Columbia, Missouri 65201

835 **JOUPPILA, PENTTI; YIOSTALO, PEKKA; & PYSTYNEN, PAAVO.** Fetal head growth measured by ultrasound in the last few weeks of pregnancy in normal toxaemic and diabetic women. *Acta Obstetricia et Gynecologica Scandinavica,* 49(4):367-369, 1970.

In utero ultrasound determinations of fetal biparietal diameter, starting in the thirty-second week of gestation, in 41 normally pregnant women disclosed an average increase in diameter of 1.8 mm/week. In keeping with the reported arrest of fetal-head growth after week 40 of gestation, the growth rate decreased as the calculated term approached. Measurements of biparietal diameter in 22 patients with toxemia of late pregnancy and in 6 diabetic patients showed the fetal head grows in the same way in these patients as in normal pregnancy. Since fetal size in toxemic pregnancy is frequently smaller and, in diabetic pregnancy, larger than the pregnancy duration would suggest, the "true" fetal maturity in these 2 groups may probably be estimated from such ultrasound evaluations. (9 refs.) - *B. Berman.*

University of Oulu
Oulu, Finland

836 **PERSSON, BENGT, *LUNELL, NILS-OLOV; CARLSTROM, KJELL; & FURUHJELM; MIRJAM.** Urinary oestriol excretion in strictly controlled diabetic pregnancies. *Acta Obstetricia et Gynecologica Scandinavica,* 49(4):379-384, 1970.

A prospective study involving serial determinations of urinary estriol excretion in 48 insulin-needing diabetic women (there were 51 strictly controlled pregnancies) succeeded in avoiding any intrauterine death. Contrary to ordinary obstetrical practice, pregnancies were permitted to go to term unless fetal harm might result. When estriol values were obtained within 6-8 hours after sampling, they were extremely helpful in guiding the pregnancy and timing the delivery. Estriol values corresponded to normal values and showed no marked differences either in diabetic classes B, C, and D (White's classification), or in pre-eclamptic and non-pre-eclamptic cases. Maximum mean estriol value correlated significantly with infant birth weight at a given gestational age; estriol excretion in pregnancies yielding overweight infants was significantly higher than in those producing normal-weight offspring. (25 refs.) - *B. Berman.*

*Sabbatsberg Hospital
Stockholm, Sweden

837 **PETTERSSON, FOLKE; OLDING, LARS; & GUSTAVSON, K. H.** Multiple severe malformations in a child of a diabetic mother treated with insulin and dibein during pregnancy. *Acta Obstetricia et Gynecologica Scandinavica,* 49(4):385-387, 1970.

A 22-year-old primigravida, diagnosed with diabetes mellitus and treated with insulin and dibein (phenforminichlorid) during pregnancy, gave birth to a stillborn child showing multiple aberrations. The mother's treatment had been going on for 3 years before pregnancy, and the diabetes was under control without signs of retinopathy, nephropathy, or other vascular complications. The father, unrelated to the mother, was in good health. The infant's malformations included maceration, micromelia, micrognathia, scoliosis, and hernias. Since diabetic pregnancies are particularly susceptible to teratogenic consequences, it is desirable to record cases of rare malformations seen after treatment with particular drugs. (15 refs.) - *B. Berman.*

University of Uppsala
Uppsala, Sweden

838 **HOOFT, C.; & VLIETINCK, R.** Atypische reactie op mazelen (Atypical reaction to measles). *Acta Paediatrica Belgica,* 24(2):103-114, 1970.

An atypical reaction to measles virus occurred in 3 unrelated children who presented a similar clinical image characterized by a biphasic acute febrile illness with exanthema and sometimes by erythrodermia and follicular desquamation. Administration of antibiotics, antipyretics, or corticosteroids did not result in clinical improvement. Hepatitis was observed clinically in 2 Ss and serologically in the third. In one S, a progressively sharp slowing down of the EEG denoted encephalitis. All exhibited leukocytosis, hypergammaglobulinemia, and lactacidorrhea. Two Ss had very loose stools. The acute phase lasted for 1 month with 2 Ss relapsing 3 months later. Bacteriological and virological investigations and isolations were negative with the exception of the complement-binding antibodies against measles which showed a significant rise. No S had been vaccinated against measles. The level of antibodies rose more slowly but reached a higher amount than that attained during a natural measles infection. (6 refs.) - *G. Van Massenhove.*

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B-9000 Gent, Belgium

839 Vaccinatie tegen rubella (Vaccination against rubella). *Amentia,* 22(October):23, 1970.

Rubella contracted by a mother early in pregnancy is a cause of sensory handicaps and MR in children. Recently a method of vaccination was discovered which eliminates the danger. Persons who should be vaccinated are: girls in prepuberty and puberty; young women who are in contact with children, such as teachers, nurses, and young mothers, provided they avoid pregnancy during the first 2 months following vaccination; and children older than one year, so as not to contaminate pregnant women. (No refs.) - *G. Van Massenhove.*

840 **EDELSON, EDWARD.** Rubella. *Today's Education,* 59(6):42-43, 1970.

Although a new vaccine which could eliminate German measles is available, only about 25% of the nation's school children has received it and a large outbreak of rubella is feared in 1970-71. Educators can help avoid this epidemic by being sure that their own children are immunized, pushing community-wide immunization programs, and recommending that susceptible young women teachers obtain rubella shots. Immunization emphasis is on children since grown women usually contract German measles from contact with a child. German measles was first connected with fetal damage in 1941, and although scientists know that the damage done by maternal rubella is high, they are still uncertain about the amount of damage. Rubella vaccine was first tested on humans in October 1965 and has been on the market since mid-1969. The vaccination program has suffered from a shortage of federal funds. Since rubella is most prevalent where children are crowded together, it is more important to immunize school-age children than preschoolers. (No refs.) - *J. K. Wyatt.*

No address

841 **MICHAELS, RICHARD H.; ROGERS, KENNETH D.; & JOHNSON, SHIRLEY E.** Community rubella immunization. *Journal of the American Medical Association,* 213(11):1904-1905, 1970. (Letter)

The largest one-day rubella immunization program in the United States (190,845 children, ages 12 months through 12 years, in Allegheny County, Pennsylvania) produced minimal subsequent illness incidence. Cost of the program was $126,000 (66 cents/dose). Approximately equal numbers of boys and girls were immunized, but among older children (11-12 years) 55% were girls. Registration forms filled out for each child showed that about the same proportion of children at each year of age from 4 to 9 were immunized (mean of 59%). Participation was less among the youngest and among the oldest. (No refs.) - *B. Berman.*

No address

842 **VERONELLI, JORGE A.** An open community trial of live rubella vaccines: Study of vaccine virus transmissibility and antigenic efficacy of three HPV-77 derivatives. *Journal of the American Medical Association,* 213(11):1829-1836, 1970.

Tests of 3 derivatives of the HPV-77 live attenuated rubella-virus vaccine on 636 families (represented by 1,686 children and their mothers) to determine whether sibling-to-sibling vaccine-virus transmission could be detected revealed no transmission among 347 susceptible household contacts, thus indicating that the vaccinating of children is not likely to endanger their pregnant mothers. Maternal blood samples were assayed by hemagglutination-inhibition, and mothers found rubella-susceptible were given a placebo. Comparative studies were made of the responses to the 3 vaccines (with differences in antigenic efficacy), and correlations were made of the natural immunity of mothers and children. Although all the vaccines induced an antibody response in 97% of the susceptible inoculated children, the geometric mean titer for successfully vaccinated children was significantly lower than that for children with naturally acquired immunity, thus raising doubts about the long-term protection of vaccination. (18 refs.) - *B. Berman.*

Cleveland Metropolitan Hospital
Cleveland, Ohio 44109

843 **STEPHENSON, JOHN R.** Rubella vaccine for adolescents and young adults. *Journal of the American Medical Association,* 213(6):1040, 1970. (Letter)

Available effective strains of attenuated rubella vaccine should be administered to adolescent girls, since there is no certain evidence the attenuated virus can pass the placental barrier or induce congenital malformation in an early-stage fetus. Such vaccination is strongly recommended, also, because studies have shown adolescents have a low state of immunity to rubella (in a group of 192 women, ages 11 to 21 years, only 67 (32%) showed antibody titer of 1:16 or better by hemagglutination-inhibition test). Further, liberal abortion laws in many states reduce the potential risk to post-pubertal girls. Until absolute proof of the vaccine's safety is available, those taking it should be cautioned to use contraception if intercourse occurs within 3 months after vaccination. (No refs.) - *B. Berman.*

No address

844 **FURUKAWA, TORU; MIYATA, TAKAO; KONDO, KEIZO; KUNO, KUNIYOSHI; ISOMURA, SHIN; & TAKEKOSHI, TERKO.** Rubella vaccination during an epidemic. *Journal of the American Medical Association,* 213(6):987-990, 1970.

Clinical, serologic, and epidemiologic effects of administration of rubella vaccine during the course of 2 epidemics in a boys' school in Japan have demonstrated the significant protective effects of RA 27/3 given subcutaneously or intranasally. Both vaccination routes yielded satisfactory antibodies, with a significant drop in rubella cases among vaccinees compared with unvaccinated controls. RA 27/3 and Cendehill vaccines were given subcutaneously, and RA 27/3 was given intranasally: clinical reaction was negligible, with 100% seroconversion for the subcutaneous administration and 98% for the intranasal application. Interest in the latter route derives from the possibility of attaining better local immunity, which would prevent reinfection. (9 refs.) - *B. Berman.*

No address

845 **WILBANKS, GEORGE D.; BRESSLER, BERNARD; PEETE, C. H., JR.; CHERNY, WALTER B.; & LONDON, WILL L.** Toxic effects of lithium carbonate in a mother and newborn infant. *Journal of the American Medical Association,* 213(5):865-867, 1970.

The case of a 30-year-old married woman (with a long history of manic-depressive features) who received lithium-carbonate therapy in late pregnancy and became overtly psychotic after delivery (she required electroshock therapy) illustrates the need for extreme caution in using lithium during late pregnancy. Relatively stable emotionally during early pregnancy, the S showed toxicity (probably because of hemodynamic and/or metabolic changes) and emotional upset as pregnancy advanced. The neonate also displayed flaccid muscle tone and cyanotic signs along with increased serum-lithium levels. The mother's toxicity responded to massive diuresis (her lithium-ion blood levels increased after delivery, even though she received no further lithium carbonate); the infant's condition showed gradual spontaneous improvement. Careful hydration and observation of the infant of a mother receiving lithium carbonate are recommended. (7 refs.) - *B. Berman.*

1753 West Congress Parkway
Chicago, Illinois 60612

846 LLOYD-STILL, JOHN D.; PETER, GEORGES; & LOVEJOY, FREDERICK H. Infected "scalp-vein" needles. *Journal of the American Medical Association,* 213(9):1496-1497, 1970. (Letter)

A study of 17 patients with acute lymphocytic leukemia (indwelling intravenous scalp-vein needles were used with all Ss), in which 7 (41.2%) showed bacteriologically positive cultures of the needle tips, supports the results of other research which found an incidence of 32.4% in similar cases. Diminished host resistance to invasion of organisms and longer duration *in situ* of the needles account for this higher incidence of infection in leukemic patients. (No refs.) - *B. Berman.*

No address

847 ZAVORAL, JAMES H.; RAY, WALKER L.; KINNARD, PAUL G.; & NAHMIAS, ANDRE J. Neonatal herpetic infection: A fatal consequence of penile herpes in a serviceman. *Journal of the American Medical Association,* 213(9):1492-1493, 1970.

The death of an 8-day-old infant from disseminated herpetic infection illustrates the fatal consequence of transmission of primary genital type 2 herpes to the pregnant mother by a father with penile herpes. Hospitalized with fever, chills, and malaise, the mother who had a cesarean section (after membrane rupture) revealed vesicular and ulcerative herpes-simplex lesions on the labia, vagina, and cervix. The infant, despite administration of penicillin G potassium and kanamyclin sulfate, maintained a high temperature until his death in 8 days of shock and subnormal temperature. The disseminated herpes, even without fatal outcome, may have neurological and ocular sequelae. It is advisable that males with penile herpes abstain from sexual relations with pregnant women. (7 refs.) - *B. Berman.*

University of Minnesota Heart Hospital
Minneapolis, Minnesota 55455

848 WEINSTEIN, MORTON R.; & GOLDFIELD, MICHAEL D. Lithium ion toxicity and pregnancy. *Journal of the American Medical Association,* 214(7):1325, 1970. (Letter)

Caution in use of lithium during pregnancy is advisable, but resulting toxicity is neither unpredictable nor caused chiefly by the lithium ion itself. In pregnant women receiving lithium, it is doubly inadvisable to complicate the metabolic disturbances of parturition with sodium restrictions and diuretics. Lithium-ion use may be hazardous also when there is uncertainty as to the quantity used, when there is doubt about the reliability of the serum-lithium determinations, and whenever sodium restriction and diuretics are being utilized. (15 refs.) - *B. Berman.*

No address

849 PHILLIPS, CHARLES A.; MAECK, JOHN VAN S.; ROGERS, WALLACE A.; & SAVEL, HERBERT. Intrauterine rubella infection following immunization with rubella vaccine. *Journal of the American Medical Association,* 213(4):624-625, 1970.

Administration of live, attenuated rubella vaccine to a pregnant woman in the third gestation week resulted in pregnancy termination in the eighth week, and vaccine-like virus isolation from the fetus. Preliminary testing of the woman had

shown no detectable rubella hemagglutinin-inhibiting antibody; she had felt certain that she was not pregnant at time of vaccination. Interferon assays, made to characterize the virus isolate as wild-type or attenuated, produced titers more than fourfold higher than low-passage rubella virus, strain Ellis (wild type), suggesting the virus was vaccine-like. The isolate also generated large amounts of interferon, but held back synthesis of DNA in phytohemagglutinin and production of lymphocytes (56%) far more than seen in the wild-type strain (95%). Histologic examination of decidua 5 weeks after immunization showed changes seen in gestational rubella and villi changes common in spontaneous abortions. Since the newly licensed live, attenuated rubella vaccines may be teratogenic, their use in pregnancy is contraindicated. (10 refs.) - *B. Berman.*

University of Vermont Medical School
Burlington, Vermont 05401

850 LITWAK, OSCAR; TASWELL, HOWARD F.; BANNER, EDWARD A.; & KEITH, LOUIS. Fetal erythrocytes in maternal circulation after spontaneous abortion. *Journal of the American Medical Association,* 214(3):531-534, 1970.

Venous-blood samples from 98 unselected spontaneously aborting women (pregnancies had advanced to 8-20 weeks) revealed transplacental hemorrhage in 31 (32%) of Ss (26 had at least 0.05 ml of fetal blood in their circulation). Ss with 1 or 2 pregnancies showed a higher incidence of fetal hemorrhage than multigravida Ss. Administration of anti-Rh_0 γ-globulin following abortion in an Rh-negative patient appears desirable, since the relationship of isoimmunization to fetal hemorrhage following abortion is not clear, and because of the high incidence of such hemorrhage. The trend toward more frequent hemorrhage in threatened abortions may be explained by the mechanical resistance to uterine contractions in a closed cervical os; the intact fetus and placenta would permit entrance of many erythrocytes into the disrupted vessels of the decidua basalis. (20 refs.) - *B. Berman.*

Mayo Clinic
Rochester, Minnesota 55901

851 HALPERN, WERNER I. Impairment of auditory regulation, and rubella. *Journal of the American Medical Association,* 214(5):916, 1970. (Letter)

Austistic behavior in vulnerable children may derive from central regulating impairments—including auditory difficulties. Also, some cases of developmental aphasia, with autistic behavior, may be variants of congenital rubella syndrome. Early treatment with a speech-awareness program, plus speech and language training, may prevent profound arrest and may even reverse the social isolation of autistics. (6 refs.) - *B. Berman.*

No address

852 SPEIER, JAMES E. Complications of rubella vaccination. *Journal of the American Medical Association,* 213(13):2272, 1970. (Letter)

Four weeks after administration of 3,500 doses of rubella vaccine in Navarro County, Texas, 7 patients complained of nocturnal paresthesias and weakness in hand and palm, with itching and tingling sensations. There was no evidence of arthritis, and all recovered spontaneously in 2-5 days. All complaints and findings suggested a brachial neuritis rather than arthritis or arthralgia. It is possible neuritis after rubella vaccination is being inadvertently called arthritis. (No refs.) - *B. Berman.*

No address

853 LEHANE, DANIEL E.; NEWBERG, NEIL R.; & BEAM, WALTER E., JR. Evaluation of rubella herd immunity during an epidemic. *Journal of the American Medical Association,* 213(13):2236-2239, 1970.

In 6 groups of Marine trainees (selected during the rubella epidemic of 1967 and followed longitudinally for 6-8 weeks to determine the effects of different levels of herd immunity on incidence of clinical and subclinical rubella), herd immunity ranged from 84.4 to 100%, but, nevertheless, all susceptible men, regardless of the herd-immunity level, developed rubella antibody. Serum samples (taken from each man at the beginning and end of the study period) were tested for hemagglutination-inhibiting antibody; a fourfold or higher increase in antibody titer was considered diagnostic of infection. All men who

lacked hemagglutination-inhibiting antibody in initial serum specimens showed them at the study's end. Since the indirect-protection method of herd immunity is ineffective, increased effort is needed to give direct vaccination to susceptible women before they become pregnant. (II refs.) - *B. Berman.*

Naval Medical Field Research Laboratory
Camp Lejeune, North Carolina 28542

854 Rubella virus vaccine, live. *Clinical Pediatrics,* 9(12):15A, 19A, 1970.

The goal of rubella virus vaccination is to prevent infection of the fetus and this can be accomplished by conferring long-standing immunity on children before they reach the child-bearing age or before they spread a natural infection to a susceptible woman. Transient arthralgia and arthritis are the major side effects of inoculation. Priority for immunization is given to kindergarten and elementary school children. Pregnant women should not be immunized and women of child-bearing age must not become pregnant for 2 months after immunization. Rubella virus vaccine is contraindicated in altered immune states, severe febrile illness, hypersensitivity to vaccine components, or simultaneous administration with other live virus vaccines. (No refs.) - *E. L. Rowan.*

855 **SCHUERGER, GEORGE; ROBERTSON, ALEX; & ERTEL, INTA.** Effects of agitation of donor blood on neonatal exchange transfusions. *Clinical Pediatrics,* 9(12):715-718, 1970.

A mechanical apparatus simulating neonatal exchange tranfusions as well as mathematical models have demonstrated that donor blood should be agitated before exchange in order to maintain steady levels of circulating erythrocytes. Blood which has been allowed to settle before transfusion will result in very high hematocrits (erythrocyte sediment) early in the procedure and low hematocrits (plasma) which may even be less than the original cell fraction at the end of the procedure. (4 refs.) - *E. L. Rowan.*

Ohio State University College of Medicine
Columbus, Ohio 43210

856 **HANKIN, LESTER; HANSON, KENNETH R.; KORNFELD, JOSEPH M.; & ULLMAN, WILLIAM W.** Simplified method for mass screening for lead poisoning based on δ-aminolevulin acid in urine. *Clinical Pediatrics,* 9(12):707-712, 1970.

The development of a dip-stick makes it possible to do mass screening for lead poisoning. A piece of cation exchange paper stapled to a plastic handle is dipped in urine, dried, and sent to the laboratory where δ-aminolevulinic acid is eluted and assayed. Samples assayed by both dip-stick and ion exchange column showed satisfactory correlation. Results are graded normal, trace, or positive on the basis of current practice with the column method. The method is simple (as collection can be done by parents), economical, and of great potential value in populations at-risk. (10 refs.) - *E. L. Rowan.*

Connecticut Agricultural Experiment Station
New Haven, Connecticut 06504

857 **BOROCHOVITZ, D.; LEVIN, S. E.; KRAWITZ, S.; & *METZ, J.** Hemoglobin-H disease in association with multiple congenital abnormalities. *Clinical Pediatrics,* 9(7):432-435, 1970.

Hemoglobin-H disease (an α-thalassemia) is reported for the first time in an African Caucasian. The boy also has multiple congenital anomalies not previously reported with the disease. Failure to thrive and cardiac failure were noted shortly after birth. A patent ductus arteriosus was later repaired. Cryptorchidism, glandular hypospadias, and MR were also found. (4 refs.) - *E. L. Rowan.*

*P.O. Box 1038
Johannesburg, South Africa

858 **BOGGS, THOMAS R.** Proper place of intrauterine transfusions in management of fetuses with Rh hemolytic disease. *Clinical Pediatrics,* 9(11):636-637, 1970.

The fetus with Rh-hemolytic disease is best managed by terminating the pregnancy at the beginning of the 34th week; however, intrauterine transfusion continues to have a place in the

management of the severely affected fetus prior to that date. Infection, soft tissue damage, and premature onset of labor are the principal complications of transfusion. Recognition of appropriate cases is dependent upon amniotic fluid analysis. An ascending slope in optical density through upper-midzone and high zones after 28 weeks is indication for transfusion. The use of this criterion along with early termination offers the best hope for fetal salvage. (8 refs.) - *E. L. Rowan.*

Pennsylvania Hospital
Philadelphia, Pennsylvania 19107

859 **FRIEDMAN, EMANUEL A.; CHARLES, ALLAN G.; & ALPERN, WILLIAM M.** Significance of mid-zone fluctuations in amniotic fluid spectrophotometric analysis for Rh-isoimmunization. *Obstetrics and Gynecology*, 35(3):358-363, 1970.

Prognostication of the outcome of Rh-sensitized pregnancies, based on levels of mid-zone spectral absorption peaks, is possible in terms of general trends. Spectrophotometric analysis of specimens obtained by amniocentesis from Rh-sensitized pregnancies indicated that 58 Ss had mid-zone levels of optical density peaks at 450 mμ (mid-zone was defined as between 0.07 and 0.17 optical density units). A total of 193 analyses was performed on the patients: 44 before 28 weeks gestation, 94 between 28 and 32 weeks, and 55 after 32 weeks. Results indicated that progressively rising peaks are associated with higher perinatal mortality and with serious isoimmunization sequelae as reflected in more frequent and severe anemia and greater need for exchange transfusions. A good outcome is associated with progressively lowering peaks. Positive trends were noted for 27 Ss, and perinatal mortality was 16 (59.3%) for this group. Negative trends for 31 Ss were associated with only 2 (6.5%) perinatal deaths. While absolute mid-zone values have little prognostic value, the direction and rate of change of the values are important, and monitoring of these changes can provide information as to optimal time of delivery or for intrauterine transfusion. (9 refs.) - *M. S. Fish.*

Beth Israel Hospital
Boston, Massachusetts 02215

860 **SCOTT, JAMES S.; & GOOD, W.** Studies on chemical inhibition of the rhesus antigen-antibody reaction. *Obstetrics and Gynecology*, 35(3):351-357, 1970.

Preliminary results of a study suggest that chemical inhibition of rhesus antibody is feasible and that, in the mechanism of inhibition, hydration plays an important role. Based on the known specificity of certain brain gangliosides as inhibitors of rhesus antibodies, hypothetical structures of potential inhibitors were proposed, and a series of chemicals were tested *in vitro* by the albumin displacement method of antibody titration. Of the 12 chemicals examined, para-amino-salicylic acid was found to be a weak inhibitor in the concentration range of 3-12%. The pattern of the response of inhibition to this and other substances suggests that hydrational properties are likely as important as structural configuration and electrochemical factors. (31 refs.) - *M. S. Fish.*

University of Leeds
Leeds LS2 9NG, England

861 **HORGER, EDGAR O.; & HUTCHINSON, DONALD L.** Drug-induced hydrops in the fetal lamb. *Obstetrics and Gynecology*, 35(3):364-370, 1970.

An effort to produce in the fetal lamb an experimental model which simulates the pathophysiology of severe human erythroblastosis fetalis is described. Initial studies centered on slow exsanguination of the fetus and produced anemia in 7 fetuses, but no hydrops. Phenylhydrazine hydrochloride, when administered intravenously, caused a hematocrit and hemoglobin decrease of about 50% within 3-5 days; however, additional injections were required to maintain the anemia, and a gradual rise in plasma protein concentration occurred. When cycloheximide was given to 9 fetuses which had been initially treated with phenylhydrazine, 3 with early manifestation of hydrops fetalis were delivered, 2 were markedly hydropic at delivery, and 3 died of the cycloheximide injection. The study offers hope for the development of a model which can provide information on the treatment of anemic human fetuses and the optimal time for transfusions and delivery. (17 refs.) - *M. S. Fish.*

Medical University Hospital
Charleston, South Carolina 29401

862 **PORTO, SERGIO.** Effects of phototherapy on neonatal hyperbilirubinemia: A reply. *Journal of Pediatrics,* 77(2):345-346, 1970. (Letter)

The explanations of Kopelman and Odell regarding the rebound in the saturation index do not seem satisfactory. Bilirubin photoderivatives are water soluble, are rapidly eliminated, and, as a consequence, likely would not contribute to the rise in the saturation index, particularly on the sixth day rather than during the previous period when they were being formed. Presently available data do not explain this rebound phenomenon, and both the saturation index and bilirubin concentration should be monitored after phototherapy is discontinued. (10 refs.) - *M. S. Fish.*

Cel. Bordini
Brazil, South America

863 **KOPELMAN, ARTHUR E.; & ODELL, GERARD B.** Effects of phototherapy on neonatal hyperbilirubinemia. *Journal of Pediatrics,* 77(2):344-345, 1970. (Letter)

A recent study of the effects of phototherapy on the albumin saturation index and on serum bilirubin levels of premature Negro infants has shown a "rebound" in the saturation index after the discontinuation of the treatment. Either the bilirubin binding capacity of albumin was damaged or intermediate breakdown products of bilirubin displaced bilirubin from the albumin. (6 refs.) - *M. S. Fish.*

Johns Hopkins Hospital
Baltimore, Maryland 21205

864 **MONTGOMERY, ROBERT C.; & STOCKDELL, KENNETH.** Congenital rubella in twins. *Journal of Pediatrics,* 76(5):772-773, 1970.

A case of congenital rubella in twins with only 1 infant exhibiting clinical signs of the infection is described. The mother of the twins (probably diovular or fraternal, as indicated by blood genotyping) apparently contracted rubella during the third month of gestation. One twin, who weighed 3 pounds 12 ounces at birth, appeared essentially normal at 3½ years of age except for neurological symptoms which included hyperreflexia in the lower extremities, a degree of clumsiness, and a speech and hearing problem. The Vineland Social Maturity Scale indicated an age equivalent of 3.15 years, compared with 3.35 years for the other twin, who weighed 4 pounds 1 ounce at birth and who did not have neurological symptoms. Hemagglutination titers of 1:50 for rubella antibody in the mother and both twins confirmed the diagnosis of previous infection by rubella virus. A follow-up of the nonsymptomatic twin will be required to determine if sequelae of the infection develop later in life. (3 refs.) - *M. S. Fish.*

Fargo Clinic
Fargo, North Dakota 58102

865 **KORONES, SHELDON B.; TODARO, JANE; ROANE, JOURDAN A.; & SEVER, JOHN L.** Maternal virus infection after the first trimester of pregnancy and status of offspring to 4 years of age in a predominantly Negro population. *Journal of Pediatrics,* 77(2):245-251, 1970.

No significant differences in neurologic abnormalities, birth weight, body measurement at 1 year, and IQ at 4 years of age have been observed in infants of mothers infected with influenza A, cytomegalovirus, herpes simplex, or mumps, as compared with infants from uninfected mothers. Of a group of 4,930 pregnant women for whom antibody titers in paired sera were determined for these 4 viral agents, serologic evidence of infection by one of these agents, usually during the second trimester of pregnancy, was demonstrated in 114 women (109 Negroes and 5 Caucasians). Prospective comparisons included: birth weight, neonatal central nervous system (CNS) function, and neonatal patterns of disease; weight, head circumference, body length, and CNS status at 1 year; IQ (Stanford-Binet) at 4 years; hospitalization and regular interval histories during the first 4 years. Although the results provided no indication that any of the 4 viral agents is implicated in neonatal disorders, the number of neonates whose mothers were infected with herpes (18) and with cytomegalovirus (25), both acknowledged causes of fetal and neonatal disease, may be too small to ascribe biologic significance to the data. For influenza and mumps (52 and 19 cases, respectively), however, the results tend to confirm other findings that these 2 types of infections have yet to be

implicated as causes of abnormal outcome of the infant. (28 refs.) - *M. S. Fish.*

University of Tennessee College of Medicine
Memphis, Tennessee 38103

866 **SISSON, THOMAS R. C.; GLAUSER, STANLEY C.; GLAUSER, ELINOR M.; TASMAN, WILLIAM; & KUWABARA, TOICHIRO.** Retinal changes produced by phototherapy. *Journal of Pediatrics,* 77(2):221-227, 1970.

Eyes of infants exposed to bilirubin phototherapy units should be shielded in order to prevent possible retinal damage. Exposure of 12 newborn piglet littermates for 72 hours to blue fluorescent light (300 footcandles at 46 cm from the eye), from which ultraviolet irradiation was excluded, resulted in damage to the cells of the retina as revealed by light and electron microscopy. The exposed eye, as compared with the shielded eye and the eyes of unexposed controls, had destruction of many photoreceptor elements. Examination of one animal exposed for 12 hours revealed comparable damage, and clinical blindness which was produced in another animal was not reversed after a 3-week post-exposure observation period. In addition to emphasizing the importance of precautions during exposure of infants to fluorescent light, the findings suggest the need for additional information about intensity and wavelengths of light to be used in these units in order to avoid possible detrimental effects on the vision of the infant. (7 refs.) - *M. S. Fish.*

Temple University School of Medicine
Philadelphia, Pennsylvania 19140

867 **OVERALL, JAMES C., JR.; & GLASGOW, LOWELL A.** Virus infections of the fetus and newborn infant. *Journal of Pediatrics,* 77(2):315-333, 1970.

The development and application of virologic and immunologic techniques should provide considerably more knowledge regarding the frequency, diagnosis, and effects of virus infection of the fetus and the newborn infant. In addition to the known effects of certain viral infections (fetal loss and fetal malformations), recent recognition of subclinical forms of fetal and neonatal viral infections raises questions regarding possible later neurologic sequelae. Chemotherapeutic approaches are few and, for most viral infections, ineffective. The study of animal models is expected to provide information concerning the interrelationship of virus-mother-placenta-fetus, pathologic processes of congenital malformations, mechanisms of host resistance to infection, and other factors which can aid in the future prevention and treatment of viral infections. (89 refs.) - *M. S. Fish.*

University of Utah College of Medicine
Salt Lake City, Utah 84112

868 **LEVY, HARVEY L.; TRUMAN, JOHN T.; GANZ, ROBERT N.; & LITTLEFIELD, JOHN W.** Folic acid deficiency secondary to a diet for maple syrup urine disease. *Journal of Pediatrics,* 77(2):294-296, 1970.

Iatrogenic folic acid deficiency, caused by a low dietary intake of utilizable folic acid, is a potential hazard in the treatment of infants with maple syrup urine disease (MSUD). The deficiency, however, can be reversed by parenteral administration of folic acid. The S, a 4½-month-old male infant, admitted for "failure to thrive" and poor neurologic development (retarded to a 2- to 3-month level), was found to have MSUD, as confirmed by markedly elevated concentrations of leucine, isoleucine, and valine in plasma, urine, and cerebrospinal fluid and a positive test for α-keto acids in the urine. Initial response to a synthetic diet (in which a commercial vitamin preparation was substituted for the mixture initially stipulated for the diet) was good; however, at 8 months growth increments ceased and hematocrit levels fell. Intestinal malabsorption and megaloblastic anemia, both apparently associated with a folic acid deficiency (as determined by a level of 1.8 mμg/ml as compared with normal values of 6-15 mμg/ml), ceased following oral administration of folic acid. Dietary management of MSUD should include precautions that sufficient utilizable folic acid be provided. (11 refs.) - *M. S. Fish.*

Massachusetts General Hospital
Boston, Massachusetts 02114

869 **SHULMAN, BERNARD G.; & GARCIA, RAMON.** Covering the eyes during phototherapy. *Journal of Pediatrics,* 77(2):346, 1970. (Letter)

While masking of the eyes is essential during phototherapy of infants with hyperbilirubinemia, daily uncovering and examination are important in order that a possible hazard (such as specific or nonspecific conjunctivitis) may not escape detection. In a recent case the eye covering was not removed until after a period of 4 days of phototherapy at which time a profuse conjunctivitis was discovered and found to be due to *Neisseria gonorrheae*. The incident emphasizes the importance of daily inspection of the infant's eyes. (No refs.) - *M. S. Fish.*

St. John's Episcopal Hospital
Brooklyn, New York 11213

870 **BALFOUR, HENRY H., JR.; SCHIFF, GILBERT M.; & BLOOM, JOHN E.** Encephalitis associated with erythema infectiosum. *Journal of Pediatrics*, 77(1):133-136, 1970.

The first reported case of encephalitis associated with erythema infectiosum (fifth disease) is described. This infectious illness, believed to be of viral origin, was diagnosed during a recent epidemic in which 91 cases were reported. Of this group, 11 had transient arthralgia, 3 had arthritis before or accompanying the eruptive fever, and 1 (an 8½-year-old boy) had clinical symptomatology of viral encephalitis although viral and serologic tests of throat swabs, stool, cerebrospinal fluid, and serum were negative for the viral agents usually associated with viral encephalitis. The observed 5-day period between development of a rash and appearance of central nervous system symptoms in the S (irritability, lethargy, and, later, irrationality, disorientation, and pain in the lower extremities) was comparable with that normally associated with encephalitis following virally-induced eruptive fevers. That the cause of the encephalitis was fifth disease was suggested further by the fact that a brother and uncle also developed uncomplicated forms of the illness and laboratory tests could confirm neither bacterial nor traumatic causes. (12 refs.) - *M. S. Fish.*

6608 Walnut Ridge Road
Dayton, Ohio 45414

871 **HAYNES, RALPH E.; *SANDERS, DORIS Y.; & CRAMBLETT, HENRY G.** Rocky Mountain spotted fever in children. *Journal of Pediatrics*, 76(5):685-693, 1970.

Prompt identification and treatment of Rocky Mountain spotted fever (RMSF) is important if the fatality and morbidity rates and complications from the infection are to be kept at a minimum. A recent study of this tick-borne illness in 78 children revealed that headaches, fever, rash, conjunctivitis, and edema were characteristic of the clinical symptoms due primarily to the effect on the endothelial and muscle cells of blood vessels and frequent complication by disseminated intravascular coagulation. Treatment with tetracyclines or chloramphenicol should proceed even before the confirmation of the diagnosis by laboratory procedures (Weil-Felix agglutination test and RMSF complement fixation test). Of the 78 cases, all received antibiotic or chemotherapeutic agents; 66 recovered without obvious sequelae; 3 died; 8 had neurologic, vascular, or hematologic complications; and one developed recurrent convulsions. The neurologic signs most common for RMSF are lethargy, meningismus, delerium, semicoma, and confusion. (17 refs.) - *M. S. Fish.*

*Children's Hospital
Columbus, Ohio 43205

872 **RUCKSTUHL, J.** Titerverlauf und hamolytische Spateffekte der Rhesusantikorper bei Austauschtransfusion bei Neugeborenen mit rhesusbedingter hamolytischer Anamie (Titer curve and delayed hemolytic effects of rhesus antibodies in exchange transfusions of newborn infants suffering from erythroblastosis fetalis). *Helvetica Paediatrica Acta*, 25(3):258-272, 1970.

The titers of rhesus antigen antibodies in mothers and their children, who suffered from erythroblastosis fetalis, were compared immediately after birth. The titer in the mother averaged 8 times the titer in the infant. Exchange transfusion produced an average decrease of the antibody titer to about one sixth of the original value. This effect persisted for a few days only; then the titer increased to about one-third of the original value. The antibodies in the plasma pool of the children had a mean half-life of 13 days during the first 3 weeks and 11 days in the following weeks, after the exchange transfusion. The determination of antibodies in the colostrum and the milk confirmed the expectation that antibodies were not always present and then only in low concentrations. The antibody titers were measured in the children 5, 10, and 20 days after the exchange transfusions, and the results of those children who were fed

mothers' milk and those who were not were compared. Thirty to 40 days after the exchange transfusions, the children presented a delayed anemia with mean hemoglobin values of 9 to 10 g%. In some children, the reticulocyte count was above normal. This anemia may be attributed to the persistence of rhesus antibodies in the blood. (13 refs.) - *Journal abstract modified.*

No address

873 **FAU, R.; CHATELAIN, R.; MAITRE, A.; PERRET, J.; & ANDREY, B.** Etude des sequelles globales et en particulier mnesiques, d'une meningo-encephalite proche de l'encephalite aigue necrosante (A study of the over-all and, in particular, mnemic sequelae of a meningo-encephalitis closely resembling an acute necrotic encephalitis). *Annales Medico-Psychologiques*, 128, (Part 5): 745-750, May 1970.

The survival of Ss recovered from severe meningo-encephalitis frequently involves serious neuro-psychological sequelae which, in particular, affect the memory. The case of an 18-year old girl who, following recovery, presented massive amnesia, considerable logorrhea associated with an extremely poor vocabulary, and a very strange oral behavior that manifested itself by orally grasping, sucking, and eating any object presenting itself. The mnemonic disorders comprise an anterograde as well as a retrograde amnesia. The syndrome observed is close to the one described by Kluver and Bucy in the rhesus monkey; it leads to the assumption of massive bitemporal lesions. A pneumo-encephalography performed 6 months after the onset of the disease confirmed that hypothesis. (9 refs.) - *K. Baer.*

No address

874 **RIBIERRE, M.; COUVREUR, J.; & CANETTI, J.** Les hydrocephalies par stenose de l'aqueduc de Sylvius dans la toxoplasmose congenitale (Hydrocephaly due to stenosis of the aqueduct of Sylvius in congenital toxoplasmosis). *Archives Francaises de Pediatrie*, 27(5):501-510, May 1970.

Stenosis of the aqueduct of Sylvius constitutes the usual anatomical substratum of hydrocephaly from congenital toxoplasmosis. The 3 cases illustrate 3 different forms of toxoplasmotic hydrocephaly: an apparently isolated stenosis of the aqueduct of Sylvius, which early points to toxoplasmosis; a stenosis of the aqueduct discovered later, during the course of a known toxoplasmosis; and a late stenosis (which poses a delicate pathogenic problem – progressive development of the stenosis or a new development). When the brain lesions due to the toxoplasmosis are not too diffuse, a combination of active medical therapy and neurosurgical diversion of the spinal fluid enables us to look forward to a favorable result. The completely normal mental development of 2 of the cases illustrates that possibility. (10 refs.) - *Journal Summary, edited.*

Hospital des Enfants-Malades
75-Paris-15^{e}, France

875 **VINH, LE TAN; DUC, TRAN VAN; AICARDI, J.; ROSSIER, A.; & THIEFFRY, ST.** Association de toxoplasmose congenitale et de cytomegalie chez le nourrison: Etude de deux observations anatomo-cliniques (Congenital toxoplasmosis associated with infantile cytomegalic disease: Study of two anatomo-clinical observations). *Archives Francaises de Pediatrie*, 27(5):511-521, 1970.

Anatomo-clinical observations in 2 infants (one premature) with congenital toxoplasmosis associated with infantile cytomegalic disease are reported. Death occurred at 3 months for the one and at 4 months for the premature S. No similar case has been reported in the pediatric literature; on the other hand, some cases have been reported in adults. One wonders whether the parasitic disease precedes the viral infection in cases of this type or is the viral infection primary and the toxoplasmosis secondary, as Vietzke and associates assume. (6 refs.) - *K. Baer.*

Hopital Saint-Vincent-de-Paul
75 Paris-14^{e}, France

876 **DACHY, A.; & THIRY, L.** Les affections neurologiques en rapport avec la rougeole: Considerations virologiques et immunologiques (Neuropathies related to measles: Virological and immunological data). *Acta Paediatrica Belgica*, 24(3-4):171-194, 1970.

The measles virus is involved in neurological complications which may occur shortly after infection, such as measles encephalitis, or several years later, such as subacute sclerosing panencephalitis (SSPE). A review of the underlying disease and of the afore-mentioned and other neurological complications as well as an etiological hypothesis are presented. An immunological study of Ss suffering from measles alone and from measles with neurological complications showed that, in uncomplicated measles, the intensity of the fever determines the appearance of complement-fixing antibodies as well as the rate of hemagglutination-inhibiting antibodies. In measles encephalitis without any modification of the spinal fluid, a moderate immunization response was observed which differs from the one observed in other types of neurological complications, such as isolated attacks of convulsions, meningitis, and meningoencephalitis. In SSPE, the level of the antibodies is especially high, while their ratio is comparable to that in measles with or without neurological complications. (40 refs.) - *K. Baer.*

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Brussels, Belgium

877 **FONDU, P.; BLUM, D.; DENOLIN-REUBENS, R.; & DUBOIS, J.** Relation entre les manifestations cliniques et les troubles de la coagulation dans 31 cas de meningococcemie: Evaluation de l'efficacite d'une heparinotherapie precoce (Relation between clinical manifestations and coagulation disorders in 31 cases of meningococcemia: Evaluation of the effectiveness of an early heparin treatment)). *Acta Paediatrica Belgica,* 24(3-4):231-246, 1970.

The study of coagulation in 31 meningococcemic children distinguished 3 groups, based on the clinical condition of the patients: shock (4 cases); preshock (11 cases); and normal cardiovascular (16 cases). Prothrombin time may already be prolonged in the cardiovascular group due to affection of complexes VII and X. In the preshock group, prolongations of prothrombin time and of partial thromboplastin time were observed with a lower fibrinogen level and platelet count than in the cardiovascular group. A considerable lowering of the fibrinogen level and of the platelet level was observed only in certain very serious cases (the shock group). Antithrombin was found, but rarely, and factors II and V were normal. The observations demonstrate that typical coagulation disorders appear during the clinical condition of preshock. The results of heparin therapy instituted early on the basis of certain clinical and biological criteria are discussed in the light of observations made in 17 cases and by comparison with an earlier group. Two children were admitted in a state of shock and died within a few hours. Our observations appear, therefore, to demonstrate the effectiveness of an early anticoagulant therapy in meningococcemic children. (28 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

878 **SZLIWOWSKI, H. B.; & KLEES-DELANGE, M.** Aspects visuomoteurs de la perception: Mise au point theorique et application aux intoxications oxycarbonees (Visual-motor aspects of perception: Theoretical discussion and application to carbon monoxide poisoning). *Acta Paediatrica Belgica,* 24(3-4):295-299, 1970.

Within the framework of the underlying mechanisms of behavioral, psychological, and neurological abnormalities in children with minimal brain damage, or of others with "instrumental" disorders combined with educational difficulties, the actual concepts of perception and its deviations from the visual-motor point of view are defined. Different theories on the nature of perception and its underlying mechanisms are presented. In many children with carbon monoxide poisoning, there was damage to the neuropsychological system in regard to the quality of perception and certain cognitive functions. (No refs.) - *Authors' abstract, edited.*

Free University of Brussels
Brussels, Belgium

879 **VAN GEFFEL, R.; MANDELBAUM, I. M.; DELANGE, F.; & GREGOIRE, P. E.** Un cas d'ictere du nourrisson, probablement congenital, avec immaturite hepatique prolongee (A case of icterus in an infant, probably congenital, associated with protracted hepatic immaturity). *Acta Paediatrica Belgica,* 24(3-4):415-429, 1970.

This observation refers to a newborn in whom icterus appeared on the fourth day after birth,

lasted for about 5 months, and ended in complete recovery. In the same family, icterus had occurred in 2 children who died, respectively, at 5 and 7 months of age; their deaths had not been ascribed positively to their hepatic condition. Recurrence of the syndrome in the family suggests its hereditary nature. The disease apparently reflects a protracted infantile hepatic immaturity. The patient's main clinical sign was a retention of indirect bile pigment (without hemolysis) with some direct pigment, apparently of extrahepatic origin, appearing as the jaundice increased. The biliary obstruction was entirely intrahepatic. A liver biopsy revealed an anomalous structure of the parenchyma and an extracellular biliary stasis mostly located at the centers of the lobules. The bile retention was probably due to a complete lack of bilirubin-glycuronide synthesis. The absence of glycuronyl-transferase was demonstrated by incubation of liver tissue homogenate with bilirubin and with a source of UDP-glycuronate. (29 refs.) - *Authors' abstract, edited.*

Free University of Brussels
Brussels, Belgium

880 **DODION, J.; DACHY, A.; THIRY, L.; & VOORDECKER, G.** Le diagnostic de la cytomegalie congenitale dans la perspective d'un traitement etiologique (The diagnosis of congenital cytomegalic disease from the perspective of an etiological therapy). *Acta Paediatrica Belgica,* 24(1):20-34, 1970.

In connection with the report of a case of congenital cytomegalic disease, the elements of an early diagnosis are discussed: the similarity of the septicemic picture found in this infection, rubella, and congenital toxoplasmosis; the disappearance of the lesions of femoral osteochondritis on the thirtieth day; the disappearance during the fourth month of life of the complement-fixing antibodies in the presence of a commercial cytomegalic antigen; and the presence of cytomegalic inclusions as shown by renal, but not hepatic, puncture-biopsy. Treatment with 5-iodo-2-deoxyuridine is indicated. The criteria for the evaluation of the effectiveness of that therapy are discussed. (15 refs.) - *K. Baer.*

Hopital Universitaire Saint-Pierre
Brussels, Belgium

881 **LEFKOWITZ, LEWIS B.; RAFAJKO, ROBERT R.; FEDERSPIEL, CHARLES F.; & QUINN, ROBERT W.** A controlled study of live, attenuated rubella-virus vaccine: Seroconversion of a susceptible contact. *New England Journal of Medicine,* 283(5):229-232, 1970.

Intrafamilial spread of vaccine-strain virus must be considered as a possibility when inoculating with a live, attenuated virus vaccine. Children in 22 schools were given 0.5 ml of rubella vaccine (HPV_{80}) or a placebo (Medium 199 or Salk trivalent polio vaccine). The group represented 126 families, 85 of whom had an inoculated child in whom hemagglutination-inhibition antibody (HIA) titer developed and also had a placebo recipient. Effects were assayed by HIA, neutralizing antibody, complement-fixation, and fluorescent antibody titers both before and after inoculation. Only 1 placebo recipient, a sib of 6 children receiving the rubella vaccine, showed a rise in HIA titer. The clinical course of the symptoms also indicated a virus infection. Of the 5 possible explanations for the seroconversion of this individual (coincidental infection with rubella, mistakenly labeled serum vials, technical laboratory errors, administration of the wrong inoculum, and intrafamilial spread), the last possibility was considered to be the most likely, although the administration of the wrong inoculum could not be entirely ruled out. (19 refs.) - *M. S. Fish.*

Vanderbilt University School of Medicine
Nashville, Tennessee 37203

882 **HAMILTON, E. G.** High-titer anti-D plasma for the prevention of Rh isoimmunization. *Obstetrics and Gynecology,* 36(3):331-340, 1970.

Administration of high-titer, unpooled anti-D plasma to Rh-negative mothers during the first 72 hours postpartum has proved effective in preventing sensitization to subsequent pregnancies. More than 1,400 doses of the anti-D plasma (obtained from ABO compatible, CD, D, or DE positive members of the family or laboratory workers, all without blood-borne diseases) were administered, usually intramuscularly, to Rh-negative mothers of ABO compatible, Rh-positive infants without unfavorable reactions. Of 169 treated patients returning with 195 subsequent Rh-positive pregnancies, only 2 instances of sensitization occurred, likely due to inadequate dosage. The use of high-titer, clinically potent anti-D was assured by utilizing unpooled plasma from individual donors; dosage levels were based on potency

of the plasma and the estimated amount of fetal bleed and were scaled to a level in excess of that believed to be minimally required. Of 410 patients monitored for fetal bleeds, none had greater than an estimated 1.0 ml, and 283 had no observed fetal cells. (48 refs.) - *M. S. Fish.*

St. Mary's Hospital
St. Louis, Missouri 63117

883 **WHITE, CHARLES A.; VISSCHER, ROBERT D.; VISSCHER, HARRISON C.; & WADE, MACLYN E.** Rh_0 (D) immune prophylaxis: A double-blind cooperative study. *Obstetrics and Gynecology*, 36(3):341-346, 1970.

A double-blind study of the use of a Rh_0 (D) immune globulin (RhoGAM) has shown the procedure to be a safe and effective method of preventing sensitization of Rh-negative mothers. Follow-up reports of 313 patients from a large, cooperative study indicated that of 160 treated women, none tested at 6 months, including 13 who subsequently delivered another Rh-positive infant, became sensitized; whereas, 3 of the 153 control Ss (receiving an equivalent amount of homologous γ-globulin but without anti-Rh antibody) became sensitized, and 1 of 8 women of this latter group who subsequently delivered Rh-positive infants was sensitized. Recommendations for management of the nonsensitized Rh-negative patient include: initial Rh determination on all obstetric patients; screening of all Rh-negative patients for antibodies during the first trimester and, when negative, repeated screening at later periods; identification and quantification of antibody when the screen is positive; prevention of large feto-maternal transfusions during labor and delivery; blood studies on mother and newborn infant to determine eligibility for Rh immune globulin and, where indicated, administration within 72 hours after delivery; and comparable management during subsequent pregnancies. (8 refs.) - *M. S. Fish.*

University of Iowa Hospitals
Iowa City, Iowa 52240

884 **ENDERS, JOHN F.** Rubella vaccination. *New England Journal of Medicine*, 283(5):261-263, 1970. (Editorial)

Recent observations on the degree of immunity conferred by rubella vaccine have raised a number of questions concerning the approach being utilized in the vaccination program and on the actual prevention of later infection of immunized individuals. Although the eradication of the wild-type virus may not occur by the present procedure of immunizing only young children, vaccinees who may become carriers will likely provide only a small source of the virus and vaccination of this age group may eventually restrict the spread of the virus. Present evidence, however, offers little support to this possibility. One danger may be that reduction in circulating wild-type virus may eventually result in loss of naturally acquired resistance in the adult female population, now about 85%, and render susceptible to attacks a higher proportion of this group. While more data on the effectiveness of the present vaccination program is being accumulated, other more direct approaches, including vaccination of susceptible parturient women or adolescent girls, should be examined. (2 refs.) - *M. S. Fish.*

No address

885 **CHANG, TE-WEN; DesROSIERS, SUZANNE; & *WEINSTEIN, LOUIS.** Clinical and serologic studies of an outbreak of rubella in a vaccinated population. *New England Journal of Medicine*, 283(5):246-248, 1970.

An outbreak of rubella among individuals who had been previously vaccinated emphasizes the possibility that "booster" doses may be necessary to maintain immunity, particularly among women of child-bearing age. Of a total group of 158 children, 2 to 15 years of age and housed in 8 individual cottages, 79 had no detectable hemagglutination-inhibition antibodies for rubella. Thirty-two of this latter group were given a single injection of Cendehill rubella vaccine, and the remainder served as controls; however, only 32 of the 79 were available for follow-up 10 months later. Approximately 5 months after vaccination, an outbreak of a rubella-like illness occurred, followed by 3 other successive episodes, and involved several of the children who had been vaccinated and all of the exposed, unvaccinated Ss, although only 54% of the latter group had clinical manifestations of the disease. Antibody response of the other 46% indicated that the infection had occurred. In one-half of the immunized children the infection developed but without clinical evidence. Comparison of antibody titers six weeks after vaccination with those found 2 weeks before the

epidemic showed that titers had dropped by about one-third, suggesting that the vaccine had produced only relative immunity. In 4 cottages where the disease did not appear, no antibody response was evident; however, all nonimmunized susceptible Ss exhibited an antibody response in the houses where the infection appeared. Results emphasize the occurrence of unrecognized invasion of immunized individuals by "wild" rubella virus and the likelihood that such infections occur and re-establish immunity in many individuals who have been previously vaccinated. (12 refs.) - *M. S. Fish.*

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Boston, Massachusetts 02111

886 **BERENBERG, WILLIAM; & NANKERVIS, GEORGE.** Long-term follow-up of cytomegalic inclusion disease of infancy. *Pediatrics,* 46(3):403-410, 1970.

Long-term follow-up of 12 cases of cytomegalic inclusion disease (CID) during infancy showed that 3 Ss (ages approximately 8-9 yrs at the time of evaluation) had normal intelligence; 1 was mildly retarded when evaluated just prior to the fourth birthday; 3 (between the ages of 4 and 12 yrs) were moderately retarded; and 5 (between 3 and 13 yrs of age) were severely retarded. Of this latter group the youngest S died of aspiration pneumonia shortly after evaluation. Family histories revealed a high number of miscarriages (9 in 24 pregnancies) among the mothers after the birth of affected children, whereas no miscarriages had occurred previously. The 15 live sibs, however, were apparently free of CID, although no cultures were made. Eight of the Ss were initially microcephalic, including 4 of the 5 severely retarded cases. None of the 11 survivors had seizures. Clinical and laboratory data gave no evidence of residual blood, kidney, or liver damage or of cardiac abnormalities. (19 refs.) - *M. S. Fish.*

300 Longwood Avenue
Boston, Massachusetts 02115

887 **BARATTA, ROBERT O.; GINTER, MYRNA C.; PRICE, MORRIS A.; WALKER, JAMES W.; SKINNER, RICHARD G.; PRATHER, E. CHARLTON; & DAVID, JOSEPH K.** Measles (rubeola) in previously immunized children. *Pediatrics,* 46(3):397-402, 1970.

Serologic data indicate that a measles (rubeola) outbreak among previously immunized children resulted from defective protection by the vaccine and immune globulin administered when the Ss were infants. Of a kindergarten enrollment of 145 children, 28 cases of rubeola occurred during a 3-month, county-wide epidemic. Nineteen of the cases had been immunized with live attenuated measles virus vaccine and immune globulin prior to the first birthday and 6 were similarly vaccinated between 13 to 20 months of age. Comparison of clinical symptoms of the 25 immunized cases with those of 22 children who contracted the virus but who had not been vaccinated revealed little difference in the severity of the illness. The mean rubeola hemagglutination inhibition antibody titers of 5 convalescent, previously immunized (before the first birthday) cases was 1:320, compared with 1:40 for 9 classmates who did not contract the infection (6 of this latter group had also been immunized before their first birthday). Comparable complement fixing antibody titers for the 2 groups were 1:128 and 1:16, respectively. (19 refs.) - *M. S. Fish.*

National Communicable Disease Center
Atlanta, Georgia 30333

888 **SACHS, HENRIETTA K.; BLANKSMA, LORRY A.; MURRAY, EDWARD F.; & O'CONNELL, MORGAN J.** Ambulatory treatment of lead poisoning: Report of 1,155 cases. *Pediatrics,* 46(3):389-396, 1970.

Early detection and detoxification in cases of subclinical lead poisoning can result in a decrease in mortality due to ingestion of this substance. A total of 1,155 patients who had a lead concentration greater than 50 μg/100 ml whole blood or an 8-hour excretion of over 1,000 μg/l of lead in the urine after calcium disodium edetate (EDTA) provocative test, and who were referred and examined over a 2-year period, was administered the chelating agents, EDTA (intramuscularly), penicillamine (orally), or the 2 drugs in sequence. While several reactions to penicillamine were noted, none of the Ss reacted adversely to EDTA, and the observed incidence of encephalopathy due to lead poisoning was greatly decreased. Of a total of 1,336 city-wide cases reported during the 2-year period, 17 deaths were recorded; however, one year later, reported cases dropped to less than 450 with only 1 death, indicating that the program of canvassing the high-risk neighborhoods for cases of

possible lead poisoning had been effective. (5 refs.) - *M. S. Fish.*

182 La Pier Street
Glencoe, Illinois 60022

889 **JABBOUR, J. T.; ROANE, J. A.; & SEVER, J. L.** Studies of delayed dermal hypersensitivity in patients with subacute sclerosing panencephalitis. *Neurology*, 19 (10):929-931, 1969.

Patients with subacute sclerosing panencephalitis (SSPE) respond normally to various agents which test immunological competence. Ss were 8 male patients with SSPE and a matched control group of 8 Ss who had had measles (rubeola) virus. Evaluation of delayed dermal hypersensitivity to various antigens showed that all 8 patients had a 10- to 20-mm skin induration to Candida albicans; 2 of 8 reacted to histoplasmin and mumps antigen; 2 of 3 were sensitized with dinitrochlorobenzine. Complement-fixation and hemagglutination-inhibition tests to determine measles antibody titers revealed no changes 2 to 6 weeks following intradermal inoculation of live measles vaccine in 8 patients or inactivated measles vaccine in 2 others; no delayed dermal reactions occurred. No relation between antibody titers or the stage or duration of SSPE to dermal response was noted. Control Ss who had had measles showed no dermal or systemic reactions. (9 refs.) - *M. S. Fish.*

LeBonheur Children's Hospital
Memphis, Tennessee 38103

890 Prevention of Rh immunization. *Canadian Medical Association Journal*, 103 (2):180-181, 1970. (Editorial)

Guidelines for preventing Rh immunization in Rh-negative women emphasize the importance of early prenatal screening of the pregnant woman for Rh-negative blood. Failure to observe this precaution likely accounts for most of the cases of sensitization, as indicated by a recent study which showed that 87% of an urban, but only 27% of a rural, Rh-negative population received protection. The 8 guidelines are: antibody screen of maternal blood at the first prenatal visit and periodic screening thereafter if the blood is Rh-negative; screen of the father's blood; check maternal blood for Rh antibodies and for ABO and Rh grouping, and ABO, Rh, and direct Coombs test on cord blood at delivery; administration of a prophylactic dose of 300 μg of Rh immune globulin within 72 hours of delivery if the mother is Rh-negative and the cord blood is Rh-positive, direct Coombs, negative; determine the extent of prenatal feto-maternal bleed, if possible; antenatal administration of 300 μg of Rh-immune globulin, repeated at 6-week intervals if prenatal feto-maternal bleed in excess of 0.1 ml has occurred; administration of varying doses, not to exceed 900-1200 μg/day, of Rh immune globulin, depending on the amount of the feto-maternal bleed; and administration of 300 μg of Rh immune globulin following spontaneous or induced abortions of Rh-negative unimmunized women, particularly unmarried primigravida. (8 refs.) - *M. S. Fish.*

891 Subacute sclerosing panencephalitis. *Canadian Medical Association Journal*, 103(11):1192-1193, 1970. (Editorial)

Recent advances in the understanding of subacute sclerosing panencephalitis (SSP) include clarification of the ultrastructure of the inclusion bodies; demonstration of the presence in nerve cells of an antigen which reacts specifically with immunofluorescent measles antibodies, determination in sera of high levels of measles virus antibodies (and lower levels in CSF), and isolation from biopsy specimens of a virus identical with or closely resembling that of measles. While these observations suggest that a slow or latent measles virus may be responsible for SSP, a neuroimmunopathologic disorder cannot be ruled out since immunity mechanisms are disturbed in this disorder. Present conclusions include the possibility that the measles virus acts in conjunction with another agent, that an incomplete or special strain of the measles virus may be involved, or that a distorted immunological state may allow the virus to act. The importance of these investigations is emphasized by the fact that possible viral infections may be involved in other disorders such as Jakob-Creutzfeldt disease and multiple sclerosis. (45 refs.) - *M. S. Fish.*

892 **PLEWES, J. L.; & JACOBSON, I.** Recurrent meningitis. *British Medical Journal*, 4(5736):679, 1970. (Letter)

The incidental cystic findings in the case of recurrent meningitis reported by Brooke appear

(from the accompanying X-ray films) to be perineurial cysts probably not related to the meningitis. Delayed screening may account for the infrequent report of cysts, which, sometimes, may cause sciatica. In 3 years, 8 such patients were encountered, in 5 of whom the cysts were causing symptoms. (2 refs.) - *B. Berman.*

Royal Infirmary
Dundee, England

893 **WILLIAMS, J. D.; & SMITH, EDNA K.** Single-dose therapy with streptomycin and sulfametopyrazine for bacteriuria during pregnancy. *British Medical Journal,* 4(5736):651-653, 1970.

To find a minimal single-dose treatment for bacteriuria during pregnancy that would be as effective as more common therapies, a single dose of antibiotic was administered to 163 patients. The highest cure rate, after 4 regimens were administered (sulfadoxine-2g, sulfametopyrazine-2g, streptomycin-1g, and a combination of sulfametopyrazine-2g and streptomycin-1g), was obtained with the combination regimen (77%), with 36 of the 47 Ss receiving the therapy clear of the organism (*E. coli*) in 2 weeks. (The 2 drugs in combination affect the response of the sulphonamide-resistant organisms.) A cure rate of 55% was attained with long-acting sulphonamides alone, and 43% with streptomycin alone. In some cases, there was bacterial resistance despite the high cure rate with combined therapy. None of the mothers showed adverse reactions to the sulphonamide. (11 refs.) - *B. Berman.*

Dudley Road Hospital
Birmingham, England

894 **ROOK, G. A. W.; & WEBB, H. E.** Antilymphocyte serum and tissue culture used to investigate role of cell-mediated response in viral encephalitis in mice. *British Medical Journal,* 4(5729):210-212, 1970.

Administration of antilymphocyte serum (ALS) to mice infected intracerebrally with encephalitis virus prolonged average survival times; ALS-treated mice survived 8.6 days, while controls survived 7.4 days when ALS was administered subcutaneously twice weekly since birth, and 10.1 and 8.3 days, respectively, when it was administered 24 hours and 5 days after infection started. Virus-immunized mice showed lymph-node cells cytotoxic (*in vitro*) for syngenic non-neuronal, virus-infected brain cells. Life prolongation by immunosuppression with ALS resulted from a reduction of the cell-mediated response, not of the specific antibody formation. Although, generally, cell response seems to protect against viruses, suppression of cell response prolonged survival in these experiments. In late production of sensitized lymphocytes, many non-expendable cells may become antigenic before the cell response strikes, with consequent irreversible brain damage. Such a mechanism might masquerade as an "autoimmune" disease, if one were unaware of a viral presence. (20 refs.) - *B. Berman.*

St. Thomas's Hospital
London, England

895 **MURRAY, JOHN; NORRIE, D. L.; & RUTHVEN, C. R. J.** Liquor bilirubin levels in normal pregnancy: A reassessment of early prediction of haemolytic disease. *British Medical Journal,* 4(5732):387-391, 1970.

Chemical and spectrophotometric examinations of liquor-amnii specimens, withdrawn by abdominal paracentesis from 22 normal mothers between 16-22 weeks' gestation, showed the upper limit of normal bile pigment-to-protein ratios at 0.4. In a series of 110 liquor samples from Rh-negative mothers (with isoimmunization histories) in whom treatment course required a diagnosis of the disease's severity, specimens from 63 mothers before the twenty-seventh gestation week suggested a need for intrauterine tranfusion (bile pigment-to-protein ratio above 0.4 indicated a need for transfusion). Comparison of predicted with actual pregnancy outcome demonstrated the superiority of liquor-bile pigment-to-protein ratio to the simple bile-pigment value in predicting the severity of hemolytic disease. Nevertheless, since bilirubin and other blood-breakdown products may contaminate the liquor, erroneous elevated bilirubin measurements may stem from any method. (34 refs.) - *B. Berman.*

Queen Charlotte's Maternity Hospital
London, W. 6, England

896 **WRIGHT, RALPH; PERKINS, J. R.; BOWER, B. D.; & JERROME, D. W.**

Cirrhosis associated with the Australian antigen in an infant who acquired hepatitis from her mother. *British Medical Journal*, 4(5737):719-721, 1970.

A 5-month-old girl, hospitalized with jaundice, developed cirrhosis after acquiring hepatitis from the mother. The alert and well-nourished infant showed, on open surgical biopsy, an enlarged liver with active cirrhosis and large multinucleated giant cells, singly or in clumps. Radial immunodiffusion and electron microscopy revealed circulating immunoglobulins in the infant's serum, and the Au (Australian) antigen in both maternal and infant serum; the infant serum showed the antigen at the time of acute hepatitis and in 11 specimens obtained during the following 9 months during the development of cirrhosis. This active cirrhosis was a result of progression of acute viral hepatitis acquired from the mother, who was shown to be an Au carrier and who had had jaundice at the termination of pregnancy and for 1 month thereafter. Au antigen has not been reported in cord blood; a possible portal of entrance for infected material might be a small laceration in the infant's scalp at delivery. (13 refs.) - *B. Berman.*

Nuffield Medical School
Nuffield, England

897 **FRASER, K. B.** Laboratory diagnosis of rubella. *British Medical Journal*, 3(5720):463-464, 1970. (Letter)

Assay of specific antibody fractions by immunofluorescence is accurate and clinically convenient and is superior to centrifugation in identifying IgM specific for rubella virus. A clinician without the means to buy a high-speed centrifuge or without skill in gradient-centrifugation will get a rapid and reliable test with fluorescent antibody. (2 refs.) - *B. Berman.*

Queen's University
Belfast, Ireland

898 **ARIAS, IRWIN M.** Breast-milk jaundice. *British Medical Journal*, 4(5728):177, 1970. (Letter)

In differential diagnosis of jaundice persisting beyond the first 10 days of life, it is better to differentiate disorders associated with conjugated (direct-reacting) hyperbilirubinemia from those associated with unconjugated (indirect-reacting) hyperbilirubinemia. Newborn breast-fed infants (during the first week of life) have more clinical icterus than do bottle-fed infants, but the disorder is of short duration and different from the prolonged jaundice of certain breast-fed infants. The inhibitory substance 3α,20β-pregnanediol has been isolated from human milk and from urine of women with "inhibitory" milk and infants with breast-milk jaundice. However, there remain many unanswered questions about the pathogenesis of this form of jaundice. (6 refs.) - *B. Berman.*

Albert Einstein College of Medicine
New York, New York 10461

899 **CULLEY, PHYLLIS; POWELL, JEAN; WATERHOUSE, JOHN; & WOODS, BEN.** Sequelae of neonatal jaundice. *British Medical Journal*, 3(5719):383-386, 1970.

Examination at age 6 of 371 Ss, who, at birth, fell into 3 groups (hemolytic jaundice, non-hemolytic jaundice, and non-jaundiced controls), revealed no correlation between IQ (Stanford-Binet) and severity of jaundice, and a concentration of neurological impairment among low-birth-weight infants. Of 43 Ss with hemolytic jaundice all but one were considered neurologically normal; the exception, who had severe athetoid cerebral palsy with deafness, showed a serum-bilirubin level above 20 mg/100 ml. Of 230 non-hemolytic jaundice Ss, only 2 babies over 2.5 kg birth weight were neurologically handicapped at 5 years; one had minimal clumsiness and an IQ of 85, while the other had spastic diplegia (probably due to prematurity) and an IQ of 93. In this group, developmental tests at 1 year had shown an IQ decline with increasing jaundice levels, but this seemingly harmful jaundice effect was completely gone by age 6. When serum-bilirubin levels are kept below 20 mg/100 ml in Ss with non-hemolytic jaundice, neurological make-up and intelligence remain relatively unimpaired, and the blame for severe brain damage shifts from bilirubin toxicity to effects of low birth weight itself. Although some doubt presists about hemolytic jaundice, there seems no need to alter present exchange-transfusion guidelines. (22 refs.) - *B. Berman.*

Birmingham Maternity Hospital
Birmingham, England

900 Purulent neonatal meningitis. *British Medical Journal*, 4(5731):318-319, 1970.

Neonatal meningitis is most common during the first month of life and shows an incidence of 0.4/1000. Often part of a septicemic process, it can be caused in the newborn by any pyogenic organism, but *E. coli* is the most common. Maternal infection is an important predisposing cause, and labor and delivery complications (especially fetal distress) occur frequently. The early clinical picture is non-specific (lethargy, temperature abnormalities, anorexia, vomiting, and irritability). Treatment should begin as soon as blood and cerebrospinal-fluid samples have been analyzed: delay only aggravates diagnosis. Treatment, as yet, follows no uniform plan; cases are treated on an individual basis with a combination of drugs. Although the disease can occur in spite of systemic antibiotic therapy, antibiotic protection is given to infants at highest risk (fetal distress, premature membrane rupture, or perinatal infection). (10 refs.) - *B. Berman.*

901 Treatment of bacteriuria in pregnancy. *British Medical Journal*, 4(5736):631-632, 1970. (Editorial)

Until convenient and reliable identification of high-risk pregnant women (20% are likely to develop pyelonephritis, if untreated) is available, treatment is required for all pregnant women with asymptomatic bacteriuria. Short (1-week) treatment is preferable to longer courses, and the choice of drug depends on sensitivity patterns, drug toxicity, cost, and patient's cooperation; short-acting sulphonamides are the most satisfactory, although they are criticized for interfering with bilirubin-serum protein binding. Further study is needed for sulphonamide-trimethoprim combinations, since, despite their high cure rate, experimental teratogenic effects have been associated with them. Once patient cooperation is attained, good treatment means effective follow-up (with quantitative cultures), since urinary infections frequently recur. (20 refs.) - *B. Berman.*

902 **HARGREAVES, TOM.** Breast-milk jaundice. *British Medical Journal*, 3(5723):647, 1970. (Letter)

Breast-milk specimens, (from 163 nursing mothers) kept at -12°C and examined for their effect on bilirubin conjugation by male rat liver slices, showed a mean increase of 20.3% in inhibitory activity. This observation has practical implications, since sterilized deep-frozen breast milk is fed to premature infants. However, tests of sterilized specimens from a bank showed no inhibitory activity. Another puzzling fact is that 100% inhibition of bilirubin conjugation was found in 8 of 153 controlled milks, even though the infants of these 8 mothers displayed insufficient jaundice to warrant serum-bilirubin analysis. All facts point to the complexity of this problem and suggest, possibly, the importance of infant susceptibility as well as secretion of inhibitory elements in maternal milk. (1 ref.) - *B. Berman.*

Area Department of Pathology
Exeter, Devon, England

903 **GILBERT, JOHN H.** Congenital rubella syndrome. *Canadian Medical Association Journal*, 103(4):393-395, 1970. (Letter)

Since the pathology of inner ear deafness due to rubella syndrome in the newborn may be pre- or post-natal, the parents should arrange for immediate follow-up procedures by an audiologist at the time of discharge of the infant from the hospital in order to learn of techniques to determine if such damage is occurring. Hearing impairment, if present, will become more evident as the infant progresses, not only because it develops more responses to sound, affording greater reliability to the tests, but due to the possibility that damage from the virus may continue for some time after birth. At 5 months of age procedures utilizing localization responses are reliable and valid and would detect post-natal damage which an earlier screen would miss. Prior to that age few advantages of an earlier diagnosis are evident; techniques are unreliable, and the parents may have difficulty in accepting the defect and may frustrate early attempts at training. (3 refs.) - *M. S. Fish.*

University of British Columbia
Vancouver 8, British Columbia

904 **DUNN, H. G.** Congenital rubella syndrome. *Canadian Medical Association Journal*, 103(4):393, 1970. (Letter)

Difficulty in diagnosing sensorineural deafness in the newborn with rubella syndrome may be due not only to the technical problems associated with available diagnostic procedures but to the possibility that the rubella virus may actually persist in

the inner ear and cause additional damage after birth. Even expert examination, utilizing special techniques such as evoked responses in EEG, respiratory responses, or psychogalvanic skin resistance, may miss this feature of the syndrome at an early date and may not be able to determine the presence of the abnormality until later, when responses to these tests are more consistent and the findings are more reliable. (7 refs.) - *M. S. Fish.*

University of British Columbia
Vancouver 8, British Columbia

905 **CORSTON, J. McD.; PEREIRA, E.; CUDMORE, D. W.; & MORTON, B. S.** Five years' experience with intrauterine transfusion. *Canadian Medical Association Journal,* 103(6):594-599, 1970.

In an uncontrolled study, intrauterine transfusion seemed helpful in some cases of Rh incompatibility during pregnancy; the resulting offspring who survived the neonatal period seem not to have been adversely affected by this type of transfusion. It is suggested that transabdominal amniocentesis is indicated by a maternal antibody titer above 1:40, 2-tube antibody rise before 32 weeks, or a previous baby affected by Rh isoimmunization. Intrauterine transfusion was indicated by an optical density difference in Liley's zone III or high in zone II. Of 22 babies transfused before 28 weeks of gestation, 7 (31.9%) appeared to be helped; the survival rate was 16 of 28 fetuses (57.1%) past 28 weeks and 23 of 50 (46%) overall. Comparable results were obtained with two different transfusion technics. Results compare favorably with previous reports. (6 refs.) - *E. Kravitz.*

Dalhousie University
Halifax, Nova Scotia

906 **ASCARI, WILLIAM Q.; & POLLACK, WILLIAM.** Crossmatching with Rh immune globulin. *Canadian Medical Association Journal,* 103(3):304, 1970. (Letter)

A crossmatch between a prospective recipient's red cells and anti-Rh_0 (D) immune globulin is deemed necessary. This procedure can detect the presence of D^u (weak D) antigen, as well as D, in the pregnant woman prior to delivery. At delivery, this technic can also detect in the blood of an Rh-negative woman the presence of a very large amount of Rh-positive fetal blood (hemorrhage), an amount too large to be handled by the prophylactic capacity of the ordinary dose of Rh immunoglobulin. (1 ref.) - *E. Kravitz.*

Ortho Research Foundation
Raritan, New Jersey

907 **CHOWN, BRUCE; BOWMAN, J. M.; & LEWIS, M.** Crossmatching with Rh immune globulin. *Canadian Medical Association Journal,* 103(3):304, 1970. (Letter)

The suggestion is made that, since anti-D does not adversely affect D-positive blood type recipients, other weaker specific antibodies in anti-D IgG do not harm D-negative recipients. Thus, the presence of these other weaker antibodies should not rule out the use of Rh-negative persons with anti-D levels who are otherwise acceptable for plasmaphoresis for anti-D IgG production. Anti-Rh IgG can be given to either Rh-positive or Rh-negative women; this negates the need for routine crossmatching. An agglutination method (crossmatch) can detect the presence of mixtures of different red cells. But a Kleihauer test (or a direct Coombs test in the case of an immunized mother) is needed to identify the fetal-maternal nature of such a mixture. Also, the Kleihauer procedure is the only method capable of determining the amount of fetal bleeding and, thus, the amount of anti-D IgG needed prophylactically. (4 refs.) - *E. Kravitz.*

Rh Laboratory
735 Notre Dame Avenue
Winnipeg 3, Manitoba, Canada

908 Complicated measles after killed vaccine. *Canadian Medical Association Journal,* 103(7):766-767, 1970. (Editorial)

Atypical measles was noted in children 2-6 years old after vaccination with the killed measles vaccine; symptoms included petechiae, pneumonia, and severe constitutional disturbances. It is suggested that these reactions may result from the production of cell-bound or reagenic antibodies against the monkey kidney constituents of the vaccine; these antibodies may also react with autologous host tissue components, e.g., lung (pneumonia), skin (petechia), and local tissue (at the injection site). There is also the possibility

that, unlike a proliferating live vaccine, the killed vaccine provided a shorter period of immunity. The exclusive use of live (attenuated) measles vaccine is recommended. (18 refs.) - *E. Kravitz.*

909 **GILDER, S. S. B.** Laboratory diagnosis of rubella. *Canadian Medical Association Journal*, 103(10):1009, 1011, 1970.

In view of the large number of congenital malformations resulting from rubella, accurate diagnosis is important; several laboratory methods are described since the clinical diagnosis is often incorrect. The hemagglutination test is sensitive, specific, and rapid; it is most useful during the earlier phase, from 1 or 2 days after the rash appears until the antibody titer peaks (after 6-12 days). After this time, the complement fixation test may be more helpful since this reaction peaks a month or more after infection. Unfortunately, the complement fixation test does not distinguish between recent and older infections. The detection of a rubella-specific IgM globulin, present for only 3-4 weeks after onset of rubella, indicates a recent infection. (1 ref.) - *E. Kravitz.*

No address

910 **NIGRO, N.; BENSO, L.; BRUNET, M. ROSA; & IUDICELLO, P.** Haemagglutination-inhibiting anti-rubella antibodies in infancy. *Helvetica Paediatrica Acta*, 25(1):35-39. 1970.

Anti-rubella hemagglutination-inhibiting antibodies were measured in 130 children (CA 12 days to 13 yrs) and 25 adults, both groups without any history of prior clinical evidence of rubella. The results showed that the majority of these children had the antibodies. The frequency of positive sera and of the antibodies increases with the age of the children, particularly after they have reached the age of 6 yrs. Support is given to the hypothesis that anti-rubella hemagglutinin-inhibiting antibodies are present in the serum of most children. It appears also that a relatively high percentage of newborns has antibodies, evidently received through the placenta. Antibody frequency and titer values in this series from the Province of Torino are identical with those found elsewhere. (22 refs.) - *K. Baer.*

University of Turin
Turin, Italy

911 **INGRAM, G. I. C.; & HAMBLETON, G.** Anticoagulation and pregnancy. *Lancet*, 2(7687):1359, 1970. (Letter)

In the case of the child born prematurely and "small-for-dates" to a toxemic mother (the child died on the fourth day) who was given vitamin K at birth, a better treatment might have been immediate transfusion of fresh plasma (or, better, a concentrate of factors II, VII, IX, and X), following Grey et al's suggestions (they found a very variable response to vitamin K even in normal subjects). (1 ref.) - *B. Berman.*

St. Thomas's Hospital
London, England

912 Glucose-6-phosphate-dehydrogenase deficiency and malaria. *Lancet*, 2(7687):1347-1348, 1970.

The G-6-PD (glucose-6-phosphate dehydrogenase) deficiency – X-linked and largely confined to African males – shows a comparable incidence to that of the gene for sickle-cell hemoglobin. Since individuals with the heterozygous sickle-cell trait suffer no great difficulties (the homozygous form is often fatal), and also experience less serious attacks of *Plasmodium falciparum* malaria than do normal individuals (there is a close correlation between areas of the world where malaria was endemic and areas with a high-sickling-gene incidence), the G-6-PD deficiency apparently confers some protection against malaria (malarial counts are lower in young children with both the deficiency and malaria than in control groups with malaria alone). However, this association is not yet proved beyond a doubt. (The argument that hemoglobin synthesis reticulocyte lysates is depressed in the presence of low concentrations of oxidized glutathione is supported only by circumstantial evidence for glutathione accumulation in G-6-PD-deficient individuals.) (10 refs.) - *B. Berman.*

913 **FOUTS, DAVID W.; BYRNE, E. B.; & ISRAEL, H. L.** Hepatitis-associated antigen and sarcoidosis. *Lancet*, 2(7685):1257, 1970. (Letter)

In 130 patients with sarcoidosis – mostly completely ambulatory and living normal lives – agar-gel immunodiffusion revealed only 2 positive

cases with serum HAA (hepatitis-associated antigen). One of these had received previous blood transfusions; the other denied personal abuse of drugs, but had associates who regularly took drugs parenterally. This HAA prevalence level is similar to that in other inner-city areas, suggesting that the immune defect in sarcoidosis probably does not predispose to chronic HAA carrier states. (4 refs.) - *B. Berman.*

Jefferson Medical College
Philadelphia, Pennsylvania 19107

914 Fears over reinfection of rubella vaccinees 'needless.' *Medical World News*, 11(45):5-6, 1970.

Two studies showing failure of rubella vaccine to provide "herd immunity" are causing needless anxiety, since the studies were of military populations and therefore not applicable to ordinary domestic environments. In addition, reinfection involves an entirely different type of antibody from that in antibody titers following first exposure – antibody rise in an immunized person exposed to the natural disease indicates the vaccine's protective effect. In regard to immunity and pregnancy, it is still uncertain that reinfection in a pregnant woman does not affect the fetus (there is evidence from France that it does not). Antibody levels in a child remain high for 3 years, but re-vaccination may be needed at the completion of secondary school. (No refs.) - *B. Berman.*

915 **OUTRAM, NANCY D.** Vaccination against rubella. *British Medical Journal*, 2(5710):669-670, 1970. (Letter)

An intensive school program of rubella immunization should be immediately begun, since evidence submitted by Prinzie and others has shown that the hemagglutination inhibition antibody titers following vaccination are sustained for 2 years at the same level, suggesting that life-long immunity results from vaccination in the same way as from natural rubella. On this basis, it is difficult to justify a delay of perhaps 20 years for the purpose of obtaining long-term evidence when in the meantime a national program would significantly reduce the pool of infection and hence the birth of abnormal children. (1 ref.) - *N. Mize.*

Harpenden
Hertsfordshire, England

916 **LUCEY, JEROLD.** Blue light and jaundice. *British Medical Journal*, 2(5707):482-483, 1970. (Letter)

Reliable evidence now suggests that learning difficulties in humans can be produced at lower bilirubin levels than was previously realized. Phototherapy as a safe and simple replacement for exchange transfusion is useful in the treatment and control of both low bilirubin kernicterus and mild hemolytic disease in infants. To date no convincing evidence exists to indicate that the photochemical breakdown products might be toxic, and several clinical studies on humans report no adverse effects. Since little conclusive information is available as to optimal lighting conditions for newborn infants, and existing conditions in hospital nurseries in fact vary considerably, dim light should not be regarded as best. More research into both broad spectrum and blue light is needed, but in the meantime, the judicious use of phototherapy seems warranted. (9 refs.) - *N. Mize.*

University of Vermont
Burlington, Vermont

917 **STALLWORTHY, JOHN.** Abortion and rubella. *British Medical Journal*, 2(5706):422, 1970.

Isolation of urbella virus from the fetus and amniotic fluid constitutes a danger to the nursing staff handling theatre specimens as well as to staff members charged with cleansing apparatus and preparing it for resterilization. Some of these individuals are young pregnant women and should be rigorously protected from rubella infection spread in this fashion. (No refs.) - *N. Mize.*

Churchill Hospital
Oxford, England

918 Blue light and jaundice. *British Medical Journal*, 2(5700):5-6, 1970.

The use of phototherapy in cases of physiological hyperbilirubinemia in the premature infant is of questionable value, and may entail serious long-term developmental dangers. The photochemical products of bilirubin might themselves be toxic upon decomposition. Also, since light profoundly affects pineal function, sexual maturation, and circadian rhythms, and can as well be injurious to

the eyes of prematures, the possible adverse effects of such treatment on the infant, unconnected with bilirubin metabolism itself, are extremely worrisome. Until conclusive support for the benefits of this procedure is forthcoming, neonatal units are probably not justified in adding special lighting apparatus to their already long lists of needed equipment. (27 refs.) - *N. Mize.*

919 **WELLS, C. E. C.** Neurological complications of influenza. *British Medical Journal,* 2(5702):176, 1970. (Letter)

More information on possible neurological complications of influenza, particularly such post-influenza and post-pneumonia sequelae as encephalitis, disseminated sclerosis, and congestion of the brain, is urgently needed. Experience with some 18 cases in southeastern Wales during the influenza epidemic reveals that most had a myeloradiculopathy, with cord or peripheral signs predominating, and one had encephalitis. All recovered except for one adolescent who died of relapsing subdural empyema. Only 3 patients exhibited some serological evidence of recent infection with influenza virus A, with a maximum rise in titer to 1:128. (No refs.) - *N. Mize.*

No address

920 Rh immunization and abortion. *Lancet,* 2(7664):141, 1970.

An aborted pregnancy should be considered as equivalent to a full-term pregnancy when evaluating the probable anti-Rh antibody titer present in a Rh-negative woman with a Rh-positive mate. Significant anti-Rh titer may be induced in a woman aborted after 21 months to warrant treatment with immune (anti-D) globulin during subsequent pregnancies. A study of Rh-negative women with Rh-positive mates revealed that 12% (213 patients among those studied) developed Rh antibodies, and 3.2% (7 of these 213) were immunized by an aborted pregnancy. Only 1 (0.4%) of the 213 had no history of abortion or transfusion. The immunization risk after abortion averaged 3-4%. (No refs.) - *E. Kravitz.*

921 **FREDA, V. J.; GORMAN, J. G.; GALEN, R. S.; & TREACY, N.** The threat of Rh immunization from abortion. *Lancet,* 2(7664):147-148, 1970. (Letter)

Evidence is presented to support the thesis that an aborted first pregnancy increases the probability of Rh immunization during subsequent pregnancies. For a Rh-negative woman with a Rh-positive mate, the probability of Rh disease is less than 1% in a first pregnancy, but a previous abortion increases this figure to 4%. The risk of Rh immunization created by abortion is 3-4% overall when the fetal Rh type is unknown, but it is 12% for a full-term, Rh-positive pregnancy. The later the abortion, the greater the maternal Rh antibody titer. It is suggested that the administration of Rh immune globulin is indicated following abortion of a pregnancy after two months, or when otherwise indicated, as well as after term pregnancies. (12 refs.) - *E. Kravitz.*

Columbia University
New York, New York 10032

922 **LAIWAH, A. C. Y.; GOUDIE, R. B.; GOLDBERG, D. M.; DAVIDSON, J. F.; & MURRAY, T. S.** Australia antigen in west of Scotland and North of England. *Lancet,* 2(7664):121-123, 1970.

A low incidence of Australian antigen (Au) was demonstrated in western Scotland and two areas of northern England among populations with various pathologies and treatments. During the first 14 days following the onset of the symptomology of viral hepatitis, this antigen was found in only 2 of 8 patients in Maritius, 3 of 66 in western Scotland, and none of 41 in Sheffield; no age or sex differences were noted. Au was found in 2 patients who developed hepatitis jaundice 18-19 weeks after being injected with ^{125}I-labelled fibrinogen. No Au was observed in 31 patients receiving renal dialysis, 28 with Down's syndrome, 100 general hospital patients, or 167 patients who had been given multiple blood transfusions. (13 refs.) - *E. Kravitz.*

Western Infirmary
Glasgow W.1, Scotland

923 **SWINBURNE, L. M.** Leucocyte antigens and placental sponge. *Lancet,* 2(7673):592-594, 1970.

Maternal antibodies are formed against the small numbers of fetal white cells which enter the mother's circulation via the placenta. These antibodies and their antibody-antigen complexes are

absorbed by the placenta; they react with local tissue antigens to form fibrin deposition between the villi and are deposited at the trophoblastic surface. The same type of reaction takes place with antigens in the placental walls following absorption of some antibodies by the villi, e.g., fibrinoid change and endothelial thickening. The changed fibrinogen is partially reabsorbed from the intervillous space to the mother's blood; it is then deposited in the mother's glomeruli, where it results in toxic symptoms. The white cell antibodies may react with red cells which contain similar antigens, and they may block Rh antibody formation temporarily or *en toto*. (8 refs.) - *E. Kravitz.*

St. James Hospital
Leeds 9, England

924 **HUSAIN, S. I.** Congenital rubella syndrome. *Canadian Medical Association Journal*, 102(13):1410, 1970. (Letter)

Sensorineural deafness should be included among the diagnostic criteria of congenital rubella syndrome. Since the degenerative changes are limited to the stria vascularis, tectorial membrane, and the organ of Corti, rubella deafness cannot be included under central nervous system anomalies. The blood stream is apparently the medium by which the virus gains access to the cochlea. Recognizing involvement of the inner ear is important because rubella virus continues active in the cells after birth. (2 refs.) - *M-E. Sayre.*

115 Mayfair Crescent
Regina, Saskatchewan, Canada

925 **BRAZELTON, T. BERRY.** Effect of prenatal drugs on the behavior of the neonate. *American Journal of Psychiatry*, 126(9):1261-1266, 1970.

Two important factors in the genesis of individual differences in infant behavior are (1) the structure of the genotype as it defines the infant's potential for behavior and (2) the importance of the first 9 months *in utero* in shaping the genotype's expression. Sex hormones used therapeutically in pregnancy may critically alter the genotype's sexual expression as well as its behavior. Dietary inadequacy in early fetal life may change the number and size of the infant's brain cells. Drug abuse by the mother can produce chromosomal flaws as well as withdrawal symptoms in the newborn, and tranquilizers and premedications given mothers during delivery can affect the neonate's initial weight gain and his response to nursing and early learning tasks. Pediatricians and psychiatrists share a joint responsibility in developing rigorous guidelines for the scientific, documented, and justified use of drugs, diets, and hormones during pregnancy. (34 refs.) - *J. C. Moody.*

51 Brattle Street
Cambridge, Massachusetts 02138

926 **HILL, DONALD E.; ARELLANO, CORA P.; IZUKAWA, TERUO; HOLT, ALAN B.; & *CHEEK, DONALD B.** Studies in infants and children with congenital rubella: Oxygen consumption, body water, cell mass, muscle and adipose tissue composition. *Johns Hopkins Medical Journal*, 127(6):309-322, 1970.

A study of patients with congenital rubella and severe growth retardation has indicated that the viral inhibition of growth appears to be related to inadequate or altered synthesis of protein and RNA. Ten patients (5 males and 5 females; ages 1.1 to 3.0 yrs) underwent detailed study including collection of anthropometric data (length, weight, bone measurements), food intake, oxygen consumption, energy expenditure, total body and extracellular water, and muscle and adipose tissue biopsy. Nine of the 10 Ss were below the 3rd percentile for height, weight, and head circumference; 7 had birth weights below 2500 g, 4 had appropriate weights for gestational age; and 6 were small for gestational age. The Ss had intracellular water (which represents muscle and visceral tissue) of 1.3 kg less than expected values for normal children; however, these values were normal when related to weight, as were values for extracellular water and total body water. Normal values (when related to intracellular water) were obtained for oxygen consumption and heat production. In addition to significantly reduced protein and RNA concentrations, muscle size and mass were also lower than values for normal Ss of the same age, and adipose tissue had less water, protein, and collagen than normal. (31 refs.) - *M. S. Fish.*

*Johns Hopkins Hospital
Baltimore, Maryland 21205

927 **SCHWANITZ, G.; LEHNERT, G.; & GEBHART, E.** Chromosomal injury due to

occupational lead poisoning. *German Medical Monthly*, 15(12):738-746, 1970.

A study which has disclosed a high incidence of chromosomal abnormalities among workers in a lead oxide factory, in comparison to a group of blood donors, indicates the need for the establishment of better standards for the protection of such workers. Clinical, toxicological (blood lead level, urinary △-aminolevulinic acid (ALA) and porphyrin excretion, hemoglobin content of erythrocytes, and basophil stippling of erythrocytes), and cytological (both *in vivo* and *in vitro*) tests of 8 workers in a lead oxide factory and of 15 healthy blood donors revealed that even in the absence of clinical signs of lead poisoning in the experimental group, these workers had elevated lead blood levels (mean value of 74.7 μg/100 ml compared to normal values of 14.9±4.9 μg/100 ml whole blood) and ALA excretion rates, in some instances, far above normal values. Secondary chromosome aberrations were significantly ($p<.001$) higher in the experimental, as compared to the control group. A correlation also existed between excretion of ALA and the proportion of mitoses with secondary abnormalities observed among the workers. Gaps, breaks, and non-specific effects (defective spiralization, stickiness, and fragmentation) were more frequent among the experimental Ss, and of 800 mitoses observed, 118 isochromatid and 70 chromatid aberrations occurred in this group, as compared to 62 and 33 isochromatid and chromatid anomalies, respectively, found in 1,500 mitoses observed for the control group. *In vitro* tests of the effect of lead acetate (10^{-4} $-^{-6}$ molar) on lymphocyte cultures produced the same abnormalities; however, abnormal mitoses were not dependent on the lead acetate concentration. (14 refs.) - *M. S. Fish.*

Institut fur Humangenetik und
Anthropologie der Universitat
Bismarkstr. 26, 852 Erlangen, Germany

928 **JANNE, O.; PERHEENTUPA, J.; & VIHKO, R.** Plasma and urinary steroids in an eight-year-old boy with 3β-hydroxysteroid dehydrogenase deficiency. *Journal of Clinical Endocrinology and Metabolism*, 31(2):162-165, 1970.

A combination of ambiguous genitalia, poor thriving, a good response to exogenous corticoids, and elevated urinary excretion of 17-ketosteroids has suggested a 3β-hydroxysteroid dehydrogenase deficiency in an 8-year-old male. The S, sluggish and jaundiced at birth but with no other remarkable physical features except the ambiguous genitalia, began to thrive when treated with oral cortisol, sodium chloride, and deoxycorticosterone – the latter by injection. Under this treatment excretion of 17-ketosteroids and 17-ketogenic steroids decreased, and at 5.8 years of age, deoxycorticosterone was discontinued and cortisol was increased. Plastic surgery was utilized in an attempt to correct the genital anomaly. At 8 years of age quantitative steroid determinations, utilizing gas-liquid chromatography and gas chromatography-mass spectrometry, indicated that plasma and urinary neutral steroids had almost exclusively the 3β-hydroxy-Δ^5 structure, a finding which, in association with the other observations, confirmed the diagnosis. (20 refs.) - *M. S. Fish.*

University of Helsinki
Helsinki, 17, Finland

929 **HARGREAVES, TOM.** Jaundice in pregnancy and in the neonate. *Nursing Mirror*, 130(16):27-29, 1970.

Normal and abnormal bilirubin metabolism is described including the alteration of metabolism during pregnancy, when the ability of the liver to excrete substances into the bile is impaired. Causes of jaundice in pregnancy, but not associated with pregnancy, include viral hepatitis, gallstones, and drugs. Hyperemesis gravidarum (vomiting during pregnancy) is a cause of jaundice during the first trimester; the third trimester may be endangered by intrahepatic cholestasis, eclampsia, or acute fatty liver of pregnancy. As for bilirubin metabolism in the neonate, it takes 3 to 4 weeks for bilirubin conjugating capacity to reach adult levels. Jaundice in the neonate may be caused by overproduction of bilirubin as a result of Rh or ABO incompatibility or lack or inhibition of the enzyme glucuronyltransferase. Unconjugated hyperbilirubinemias may lead to kernicterus, with greater danger of this occurrence if the bilirubin level rises above 20 mg/100 ml. Survivors may develop athetosis, spastic paralysis, deafness, and MR. Exchange transfusions, administration of salt-free human albumin, exposure to light, and stimulation of glucuronyltransferase are discussed as possible treatments of neonatal jaundice. (No refs.) - *M-E. Sayre.*

No address

930 End of rubella in sight? *Nursing Mirror*, 130(11):18, 1970.

Cendevax vaccine against rubella is now available on prescription and offers hope that a chief cause of fetal death and of mental and physical handicap will shortly be eliminated. The vaccine has been used in more than 100,000 children and adults in many countries and was well tolerated and effective. Immunity has persisted for 3 years after vaccination, although the total duration of immunity cannot now be predicted. The vaccine consists of a freeze-dried preparation; it is reconstituted with distilled water. A single 0.5 ml dose should be given by subcutaneous or intramuscular injection. Pregnant women should not receive the vaccine. A mass immunization program for school children has been suggested, but as yet vaccination against rubella is not regarded officially as in pursuance of public policy. (No refs.) - *M-E. Sayre.*

931 **CITRIN, PAUL H.** A useful sign in infant meningitis. *Clinical Pediatrics*, 9(4):250, 1970. (Letter)

As an adjunct to a careful history and physical examination in cases of suspected meningitis in infants, the classic "burping position" may be used. In 12 cases, it was found that babies held at the shoulder kept their necks and spinal columns in extension, rather than flexing to lie against the shoulder as is the norm. In all such cases, lumbar puncture confirmed a diagnosis of spinal meningitis. (No refs.) - *M-E. Sayre.*

No address

932 **CATLIN, B. WESLEY.** *Haemophilus influenzae* in cultures of cerebrospinal fluid: Noncapsulated variants typable by immunofluorescence. *American Journal of Diseases of Children*, 120(3):203-210, 1970.

Immunofluorescence microscopy and culture revealed a heterogeneous population of *Haemophilus influenzae* in the cerebrospinal fluid of a child with meningitis. The bacterium has also been isolated from abscess fluid, pyarthrosis, and osteomyelitis of long bone. While most of the bacteria possessed type b capsules and formed iridescent colonies, some of them lacked typical capsules and produced noniridescent rough colonies. These bacteria synthesized type b antigen in the form of discrete embossments, although they were nontypable by the capsular swelling reaction. Twenty-three of 25 other freshly isolated strains of *H. influenzae* type b also gave rise to embossed variants spontaneously. In transformation tests, it was revealed that a transmissible change of the bacterial DNA had taken place. Some "nontypable" strains of the bacterium found in pediatric specimens may be typable by the immunofluorescence technique. (18 refs.) - *M-E. Sayre.*

Marquette School of Medicine
Milwaukee, Wisconsin 53233

933 **MEADOW, ROY.** Phototherapy and hyperbilirubinaemia. *Developmental Medicine and Child Neurology*, 12(6):802-804, 1970. (Annotation)

While phototherapy has proven effective in reducing serum bilirubin levels in neonates with jaundice, until considerably more information is acquired units now in use should be operated only under carefully controlled conditions. Additional data are needed on: the safety of the procedure; the nature of the breakdown products of bilirubin; optimal time, duration, and type of phototherapy; the extent of the need to protect the eyes of the infant during treatment; the true therapeutic role of phototherapy; and the interaction of hyperbilirubinemia and other factors, such as albumin binding capacity. At the present time phototherapy is not a substitute for exchange transfusion when a neonate has a bilirubin level of 20-25 mg%. Since recent evidence has indicated that many infants with bilirubin levels below this range, particularly immature and low birth-weight babies, may be at risk for kernicterus, follow-up information on the hazards of bilirubin in such cases is needed in order that the role of phototherapy may be more properly assessed. (5 refs.) - *M. S. Fish.*

University of Leeds
Leeds LS1 3ET, England

934 **ADDY, D. P.** Cord serum IgG levels in 'small-for-dates' babies. *Archives of Disease in Childhood*, 45(244):809-810, 1970.

A group of 'small-for-dates' babies, including 'very-small-for-dates' babies, had serum IgG concentrations within the range found for babies of

normal weight and comparable gestational ages. Measurement by a modified Mancini method of IgG levels of cord blood obtained from 27 'small-for-dates' (birthweights below the tenth percentile for gestational age), including 4 'very-small-for-dates' (below the third percentile), babies and 22 normal babies (birthweights between the tenth and ninetieth percentiles) disclosed no significant differences between the 2 groups. These findings do not support those of other studies which have led to the claim that 'small-for-dates' babies, if born before the thirty-second week of gestation, are likely to develop very low levels of IgG during the first 6 months postpartum and might require injections of γ globulin. The discrepancy between these findings may be due, in part, to the present use of less stringent criteria for the diagnosis of 'smallness-for-dates' in that previous definitions applied to infants with birthweights at or below the third percentile, only. (9 refs.) - *M. S. Fish.*

Alder Hey Children's Hospital
West Derby
Liverpool 12, England

935 **JOHNSON, GEORGE M.; & *TUDOR, ROBERT B.** Diabetes mellitus and congenital rubella infection. *American Journal of Diseases of Children,* 120(5):453-455, 1970.

The reported early onset of diabetes mellitus in 2 male infants with congenital rubella suggests the possibility that congenital rubella may affect pancreatic development, possibly by reducing the number of β cells and thereby inhibiting production of insulin. Although unrelated, the 2 patients were born 6 months apart in the same geographic area. Both mothers contracted rubella during the sixth week of pregnancy, and the infants had low birth weights and classical rubella sequelae (deafness, ocular lesions, congenital cardiovascular abnormalities, dental defects, microcephaly, and mental deficiency). While the family of one infant had a considerable history of diabetes mellitus on the maternal side, the family of the other had no comparable history. Age at diagnosis of diabetes mellitus was 3 years and 1 year 10 months, respectively, for the infant from the diabetic family and the other patient. The condition of the former was controlled by 6-8 units/day of insulin zinc suspension. Isophane insulin suspension (10 units/day) minimized the glycosuria in the other S. Either β cell reduction or cytolytic action of the rubella virus, causing immunologic or direct vascular damage to the islets of Langerhans, may be of etiological significance. (17 refs.) - *M. S. Fish.*

*Quain and Ramstad Clinic
221 North Fifth Street, Lock Drawer 1818
Bismarck, North Dakota 58501

936 **YASUNAGA, SHIG; FELEMOVICIUS, LUIS; & RUDOLPH, ARNOLD J.** Eye-shield for use in phototherapy. *Lancet,* 2(7684):1195, 1970. (Letter)

Because of concern over possible damage to an infant's retina and macula during phototherapy for treatment of hyperbilirubinemia, commercial manufacturers should provide an appropriate mask which will afford adequate protection and usefulness. Since the use of gauze pads is time-consuming, a simple paper mask of appropriate size to fit either premature or full-term infants has been utilized to provide this protection. Rubber-band strips stapled to the mask aid in adjustment to the proper tension and allow for easy removal of the mask from the eyes during feeding. A commercial product for this purpose should be contoured, fitted with a soft material on the inner surface, and allow some light to filter through. Use of such shields can allow for occasional uncovering of the eyes and would prevent conjunctival discharge and inflammation which often occurs when gauze pads are taped over the eyes. (No refs.) - *M. S. Fish.*

Baylor College of Medicine
Houston, Texas 77025

937 **SCHULTZ, PAUL; & *STOOL, SYLVAN.** Recurrent meningitis due to a congenital fistula through the stapes footplate. *American Journal of Diseases of Children,* 120(6):553-554, 1970.

When meningitis occurs in a congenitally deaf child, a congenital anomaly of the middle ear may be present and surgery may be required. The S, a 4-year-old female, had a sagittal meningocele at birth (excised at 2.5 months), and did not respond to sound during infancy. At 21 months, a neurological examination disclosed that the S had ataxia and a bilateral sensorineural hearing loss. The S responded to penicillin when pneumococcal meningitis developed at 27 months; however, on

readmission at 4 years 3 months, a culture of cerebrospinal fluid revealed the presence of pneumococcus, and myringotomy of the right tympanic membrane disclosed purulent fluid. Examination of the stapes disclosed a small fistula in the anterior central portion of the footplate. The middle ear was obliterated by removal of the tympanic membrane and the middle ear mucosa, curettment of the eustacean tube, placement of a temporal muscle flap into the middle ear, and closure of the external canal. The patient, on follow-up over a 2-year period, had no recurrence of meningitis. The hearing deficit and ataxia remained unchanged; however, the child was progressing satisfactorily in a school for the deaf. The need for surgery in this case is emphasized by the fact that of 22 other patients reported with this anomaly, 14 had meningitis at least once. (22 refs.) - *M. S. Fish.*

*Children's Hospital of Philadelphia
Philadelphia, Pennsylvania 19146

938 **McCRACKEN, GEORGE H.; & JONES, LINDA GAY.** Gentamicin in the neonatal period. *American Journal of Diseases of Children*, 120(6):524-533, 1970.

Gentamicin is an effective drug for use in the treatment of severe neonatal infections. Susceptibility studies showed that concentrations of 5 μg/ml inhibited *in vitro* more than 90% of the strains of *E coli, S aureus, Pseudomonas*, and *Klibsiella-Enterobacter* species. Determination (by micromodification of the standard cup-plate technique) of gentamicin levels in serum from 49 infants (27 with ages under 1 week, 15 between 1 and 4 weeks, and 7 from 1-6 months of age), given gentamicin intramuscularly (1.5 mg/kg/dose for 37; 1.0 mg/kg/dose for 12), showed that in the higher dose range administration every 8-12 hours produced mean serum levels of 2.5 - 5.0 μg/ml of the drug. The serum drug half-life was comparable to that of adults in the infants over 1 week of age. Treatment of 15 infants with bacterial infections, including some unresponsive to other antimicrobial agents, gave satisfactory results with no indication of toxicity. Reports of increasing resistance of certain organisms to kanamycin suggest that the use of gentamicin in infants should be investigated further. Doses of 1.5 mg/kg/dose, intramuscularly, every 8-12 hours in cases where the pathogen is known to be sensitive to the drug, is recommended. The infant, however, should be carefully monitored for possible hematologic, renal, or hepatic toxicity. (20 refs.) - *M. S. Fish.*

University of Texas
Southwestern Medical School at Dallas
Dallas, Texas 75235

MEDICAL ASPECTS – Etiologic Groupings

Trauma or physical agents

939 **REYNOLDS, E. O. R.** Hyaline membrane disease. *American Journal of Obstetrics and Gynecology*, 106(5):780-797, 1970.

Hyaline membrane disease affects premature infants (their most frequent cause of death) with abnormal chest retractions, cyanosis, and breathing difficulties; at autopsy, lungs show surfactant deficiency and hyaline membrane lining shows dilated terminal airways. It occurs in about 50% of infants weighing 1,000-1,500 grams at birth, and its most common cause is short gestation. It shows well-defined respiratory signs, radiographic features (reticulo-granular opacities and streaky shadows), and a remarkably constant course, although there are problems of differential diagnosis. Pathological signs at autopsy include no lung aeration, airways lined with eosinophilic membrane which is not found in infants dying less than 4 hours after birth, while alveolar proliferation is seen in infants surviving more than 48 hours, and intracranial hemorrhage. An important pathophysiologic element is deficiency of pulmonary surfactant, which causes gas maldistribution in the lungs, cyanosis (interference with gas exchange caused by unstable air sacs), and pursed-lip, emphysematous breathing. Prevention and management of the disease include avoiding premature delivery and perinatal

asphyxia, maintaining proper temperature, checking blood gases and pH to maintain oxygen tension, fluid therapy and feeding, antibiotics, and mechanical ventilation. Research is continuing on such measures as surfactant replacement, pulmonary vasodilators, and extracorporeal circulation. (135 refs.) - *B. Berman.*

University College Hospital Medical School
London, England

940 **BALLABRIGA, A.; MORAGAS, A.; GALLART-CATALA, A.; & BARAT, N.** Respiratory pathology in the immediate postnatal period. *Acta Paediatrica Scandinavica,* 59(5):497-504, 1970.

Post-mortem findings on pulmonary involvement in 32,953 infants (1,433 prematures), observed in a 27-month period, showed a significant difference in male incidence and a 6.4% disease incidence among the full-term babies. The highest incidence of hyaline membrane occurred in the group weighing between 1251-2500 gm, and hyaline-membrane frequency was highest in those delivered by cesarean section or breech presentation. Intrauterine pneumonia was highest in the 500-1250 gm group. In 700 autopsies, 333 prematures (death during 0-5 days) showed a 37.4% incidence of hyaline membrane; in 190 full-terms, the incidence was only 17%. Literiosis was the main cause of death in 1.71% of the 700 cases. In 406 sets of twins, it was not possible to discern a predominance of severe forms of respiratory distress or of deaths in either sex. In both full-term and premature Ss, pneumonia was the chief cause of death in those who lived 5-30 days. (16 refs.) - *B. Berman.*

Children's Hospital of the "Seguridad Social"
Barcelona, Spain

941 **FURUHJELM, MIRJAM.** Caesarean section in cases of imminent fetal asphyxia. *Acta Obstetricia et Gynecologica Scandinavica,* 49(4):299-302, 1970.

In 112 cases, diagnosed with imminent fetal asphyxia and delivered by cesarean section, 24 have not developed normally, as contrasted with only 4 in a control group of 84 delivered by cesarean section for other than asphyxia reasons (a statistically significant difference). Twenty-three of the asphyxia infants had an Apgar score of less than 7 after 1 minute (they started to breathe only after resuscitation); 29 had the umbilical cord around the neck and arms in a way that could explain the imminent asphyxia. Judgments of asphyxia were only on the basis of fetal heart rate and amniotic-fluid observations; since these methods are too uncertain to permit exact diagnosis, it must be assumed that some cesarean sections could have been avoided with better methods (it is not possible to avoid some physical and/or mental malformation with cesarean deliveries because of asphyxia). The risk of mental handicap can be evaluated only by a prospective study of those children now registered as late developers. (6 refs.) - *B. Berman.*

Sabbatsberg Hospital
Stockholm, Sweden

942 **JAYALAKSHMI, PANNATHAPUR; *SCOTT, T. F. McNAIR; TUCKER, SAMUEL H.; & SCHAFFER, DAVID B.** Infantile nystagmus: A prospective study of spasmus nutans, congenital nystagmus, and unclassified nystagmus of infancy. *Journal of Pediatrics,* 77(2):177-187, 1970.

Infants with nystagmus appear to have a higher incidence of electroencephalographic and other neurologic disorders, including strabismus, than do comparable children without nystagmus. The Ss, taken from a group of 9,368 children who were part of a national study, were 52 children with nystagmus at the twelfth month or earlier and classified as: spasmus nutans, 31; congenital nystagmus, 4; and nystagmus without further diagnosis, 17. Control Ss were children from the same general study population but without a diagnosis of nystagmus at 12 months of age. The study included medical, gynecologic, reproductive, genetic, and socioeconomic histories during pregnancy and assessment of the delivery and of the pediatric, psychological, and neurological follow-up examinations up to 8 years postnatal. Results showed that no criteria could be found to predict when nystagmus in infancy would be transient or permanent. Along with a higher incidence of neurological disorders, a family history of nystagmus occurred more frequently in the experimental (as compared with control) group, and a higher incidence of nystagmus was also associated with women with 3 or more pregnancies. By 5 years of age, nystagmus disappeared in approximately one-half of the patients; however,

nystagmus, when accompanied by strabismus and/or a neurologic deficit, disappeared in only 30% compared with 70% in the absence of these other disorders. Results suggest that an organic cerebral disorder may have a causal relationship to infantile nystagmus. (35 refs.) - *M. S. Fish.*

*Children's Hospital of Philadelphia
Philadelphia, Pennsylvania 19146

943 **SHANKLIN, D. R.** Hopeful finding. *Medical World News,* 11(51):10, 1970. (Letter)

A group of 38 infants with hyaline membrane disease who received estrogen during the first 20 minutes of life showed no mortality, whereas 6 of 43 who received placebo died. Estrogen should be given immediately after birth by the umbilical vein route for most rapid effect on the lung. (1 ref.) - *E. L. Rowan.*

Chicago Lying-In Hospital
Chicago, Illinois

944 Foretelling—and averting—hyaline disease. *Medical World News,* 11(50):4, 1970.

Knowledge of the ratio of normal phospholipids in amniotic fluid is predictive of fetal lung maturation and can lead to prevention of the respiratory distress syndrome. When the surfactant called lecithin is in excess of sphingomyelin (measured by thin-layer chromatography) then the alveoli can remain patent between inhalations and the infant will not be subject to atelectasis and hyaline membrane disease. By monitoring the lecithin-sphingomyelin ratio, induction may be postponed until survival is more likely. When the syndrome is present, however, the administration of an air-oxygen mixture under low pressure shows promise of success. (No refs.) - *E. L. Rowan.*

945 **SZLIWOWSKI, H. B.; DOPCHIE, N.; & KLEES-DELANGE, M.** Mise au point de la notion de "lesions cerebrales a minima" (A discussion of the concept of "minimal brain damage"). *Acta Paediatrica Belgica,* 24(3-4):287-293, 1970.

The controversial concept of "minimal brain damage" is discussed and rejected by a neurologist, psychiatrist, and psychologist. Such abnormalities (as are found by history, observation, neurological examination, EEG, and psychological studies and on which the diagnosis of minimal brain damage is commonly based) generally are not specific and are subject to different interpretations; on the other hand, demonstrated brain damage often causes neither behavioral nor recepto-motor disturbances. The reasons leading to a rejection of the conception of "minimal brain damage" also lead to a rejection of the concept of "minimal brain dysfunction." Diagnosis should be primarily clinical and descriptive; etiology should enter into it on a secondary plane only. (No refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

946 **MANTEROLA ARAYA, ALEJANDRO.** Estimulacion precoz para ninos con alto riesgo: Retardo mental, paralisis cerebral (Precocious stimulation of high risk children: Mental retardation, cerebral palsy). *Boletin del Instituto Interamericano del Nino,* 44(173):170-176, 1970.

A 6-week MR course was given in 1969 in Montevideo (Uruguay) to 55 participants from various Latin American countries representing practically all the special fields interested in the diagnosis, medical care, and education of MR children. The conclusions were that: theoretical knowledge about conditions of pregnancy and delivery should be taken more into account so as to prevent accidents which cause many cases of MR; the potentialities of the nervous system should be fully explored so as to use them for an appropriate stimulation of the MR; the potential for acquiring new abilities is greatest during childhood and runs parallel to the growth of the whole body, so this period should be used to the full; and the teamwork of specialists in various fields is extremely important. (No refs.) - *G. Van Massenhove.*

No address

947 **MIFTAKHOVA, A. S.** Semeinye spasticheskie paralichi v sochetanii s vrozhdennoi kataraktoi i oligofreniei (Familial spastic paralyses in combination with congenital cataract and oligophrenia). *Zhurnal*

Nevropatologii i Psikhiatrii imeni S. S. Korsakova, 70(7):972-978, 1970.

Three siblings suffered from spastic paralysis of the lower extremities in conjunction with early cataracts and oligophrenia. The 16-year-old boy began to walk at age 1 year 3 months but manifested retarded mental development. It was soon discovered that the child could not see. He began to understand speech addressed to him when he was almost 2 but became increasingly physically retarded. At age 7, he was diagnosed as a TMR. The 12-year-old twin sisters began to make attempts at walking at age 1 year 2 months. At age 3, one sister became paralyzed in the lower extremities, and the other walked with difficulty. By age 4, both had become blind, paraplegia had occurred, and acute imbecility developed. Data from complete medical examination and psychophysiological investigation of the siblings indicate that familial spastic paraparesis has a broader form than the spastic paraplegia observed by Strumpel, and includes not only "pure" spastic paraplegia but disturbances of other systems as well. (17 refs.) - *B. J. Grylack.*

Bashkir Medical Institute
Ufa, Bashkir Soviet Socialist Republic

948 **KANAREIKIN, K. F.; MAKSUDOV, G. A.; & SHMIDT, E. V.** Kotsenke znacheniia prekhodiashchikh narushenii mozgovogo krovoobrashcheniia (Evaluation of the significance of transient cerebral circulatory disturbances). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova*, 70(4):491-495, 1970.

Transient cerebral circulatory disorders signal an unfavorable condition but indicate, simultaneously, that the organism is still capable of sufficient self-regulation. In an investigation of more than 1,000 histories of these disturbances, combined cerebral and cardiac circulatory disorders were noted in approximately a third of all cases, while transient cerebral ischemic episodes were combined significantly more frequently with stenocardiac attacks than with myocardial infarct. The development of cerebral infarct was found to occur in later age in individuals with transient brain ischemia. Follow-up study of 206 patients discharged from inpatient care during the past 8 years with a diagnosis of transient disorders of cerebral circulation revealed that only 5% developed cerebral infarct within this period. The creation of conditions for more active mobilization of protective mechanisms in repeated vascular attacks explains why cerebral infarcts develop significantly more often and in a more serious form if not preceded by vascular crises. (31 refs.) - *B. J. Grylack.*

Neurological Institute of the Academy
of Medical Sciences
Moscow, Union of Soviet Socialist Republics

949 **PAULSON, MORRIS J.; & BLAKE, PHILLIP R.** The physically abused child: A focus on prevention. *Child Welfare*, 48(2):86-95, 1969.

Early identification of child abuses is essential if protective services are to be helpful and the offenders rehabilitated. Of a group of 352 cases of child maltreatment, 96 were selected for study on the basis of criteria for physical abuse: radiologic evidence of a fracture not due to accident; radiologic evidence of a similar previous fracture; other clinical manifestations of injuries; confession by the attacker; positive identification of the attacker by the victim; and arrest and conviction of the attacker. Analysis of 83 categories of behavior or information relative to the abuse indicated that 90% of the cases were the classical battered child syndrome; 55% of the abused children were males; 18% of the children were under 6 months of age; 60% were under 3 years of age; biological fathers were equally abusive to sons and daughters; the mothers were twice as abusive to the daughters as to the sons; either the father or other paternal figure was more likely to abuse than the mother or other maternal figure; protective service agencies assumed responsibility for 68% of the cases after release from the hospital; and abuse occurs more frequently in lower economic levels. Various therapeutic approaches, including group procedures, have been utilized for aiding abusing parents. (31 refs.) - *M. S. Fish.*

University of California at Los Angeles
Los Angeles, California

950 It's time for my daughter to know . . . she is minimally brain injured: A mother's honest appraisal. Part II. *Children's House*, 4(2):8-11, 1970.

A mother's account of her minimally brain injured daughter's early years of school life recounts

intelligent but hyperactive behavior, impulsiveness, and easy distractability in the classroom. The child's problem was first considered to be emotional in origin, related to a maturation lag and to two previous hospitalizations for surgery. Only by the chance reading of an article on the brain injured child did the mother recognize similarities with her daughters's behavior, and have the child tested for this specific disability. When minimal neurological impairment was diagnosed, the girl was placed in a private school having small classes. Here she made some improvement, and benefited scholastically and socially through close associations with similarly affected peers. (No refs.) - *N. Mize.*

951 **TYMCHUK, ALEXANDER J.; KNIGHTS, ROBERT M.; & HINTON, GEORGE G.** The behavioral significance of differing EEG abnormalities in children with learning and/or behavior problems. *Journal of Learning Disabilities,* 3(11):547-551, 1970.

The tendency to relate EEG abnormalities directly to learning problems of children is contraindicated. Various neurologic parameters, including the EEG, are needed before an organic etiology may be deduced for a learning disability. Among the 4 groups of children studied (25 per group), 3 groups had abnormal EEG's; dysrhythmia, spike and wave, and slowing were in separate groups. Recordings were made during various states, e.g., awake, asleep, and under hyperventilation and photic stimulation. The normal EEG group demonstrated the best gross motor ability, auditory discrimination, verbal memory, and spatial memory but the worst fine motor ability. The slow EEG group was best on fine motor ability but not too good academically. Except on certain fine motor tests, the other two groups did poorly. (17 refs.) - *E. Kravitz.*

George Peabody College
Nashville, Tennessee 37203

952 Battling the hyaline membrane. *Medical World News,* 11(46):32-37,40, 1970.

The previously fatal picture of hyaline membrane disease in premature infants can now be favorably altered with supportive measures. This breathing difficulty with a potential of asphyxiation is encountered during the first moments of life; its etiology is unclear. At present, few babies of at least 31 weeks gestation and 1500 grams weight die from hyaline membrane disease. Supportive therapy includes intravenous glucose and sodium bicarbonate solutions to negate acidemia, temperature- and oxygen-controlled incubators, monitoring of temperature (skin or rectal) and respiration, chest X-rays, blood assays (e.g., acid-base, gases, hematocrit), antibiotic treatment, and mechanically assisted lung ventilation. The latter procedure is subject to dispute. (No refs.) - *E. Kravitz.*

953 **VERNON, McCAY.** Clinical phenomenon of cerebral palsy and deafness. *Exceptional Children,* 36(10):743-751, 1970.

The association of cerebral palsy (CP) and deafness was investigated in 69 children at the California School for the Deaf. Factors explored included intelligence, educational achievement, communication skills, psychological adjustment, and hearing loss. Mean IQ for 63 children tested was 83; almost half had average or better intelligence, while approximately 20% was MR. Variations in IQ occurred with etiology of the conditions. Among 45 school children, 87% of deaf CPs was "below average" in educational attainment, and only 1 child was superior. In speech, speechreading, and language, about two-thirds to three-fourths were judged poor when compared with non-CP deaf; over half has aphasia. Three measures of psychological adjustment indicated this factor to be better than expectation. Mean hearing loss in the better ear for the speech range was 78.8 Hz, significantly more hearing than in non-CP deaf children. Prevalence rate of CP among deaf children was 4.7%, 15 to 17 times the general population rate. Etiology of the 2 disorders showed overlap: anoxia, maternal rubella, prematurity, obstetrical complications, jaundice (especially that of Rh factor), toxemia, and postnatal infections such as meningitis. Correlations show that Rh factor, prematurity, and meningitis are primarily responsible. More than half the group had other physical handicaps, especially visual. Steps for prevention and habilitation are suggested. (40 refs.) - *M-E. Sayre.*

Western Maryland College
Westminster, Maryland 21157

954 **MORSE, CAROL W.; SAHLER, OLLE JANE Z.; & FRIEDMAN, STANFORD B.**

A three-year follow-up study of abused and neglected children. *American Journal of Diseases of Children*, 120(5):439-446, 1970.

Since abused and neglected children often appear to be victims of repeated abuse and neglect, more effective intervention by agencies and rehabilitation of the families would seem to be needed. In a follow-up study of 25 children (from 23 families) who were initially hospitalized for injuries or illnesses believed to have resulted from abuse or neglect, approximately one-third were suspected to have been subjected to further abuse or neglect after treatment. Approximately 70% of the children, including 9 retarded Ss, were found to be abnormal in terms of intellectual, emotional, social, and motor development; however, some of these abnormal states, particularly MR and motor hyperactivity, often appeared to have been present before the instances of abuse or neglect. The high incidence (43%) of MR among abused children in this study is comparable to earlier findings. In spite of the lack of follow-up data which would indicate a mistaken assessment of abuse, no formal charges or convictions resulted for any of the suspected abusers, although incidents regarding 22 children in 20 families were reported to various child protective agencies. Of these 22, 9 were placed successfully outside of the home. Nursing agencies appeared to be of help in 90% (9 of 10) of the cases in which they made home visits; whereas, supervision of families by protective agencies appeared to be helpful in only 54% (7 of 13) of the families under their supervision. (10 refs.) - *M. S. Fish.*

University of Rochester Medical Center
Rochester, New York 14620

955 **JOHNSTON, I. H.; JOHNSTON, J. A.; & *JENNETT, BRYAN.** Intracranial-pressure changes following head injury. *Lancet*, 2(7670):433-436, 1970.

Since clinical evidence of raised intracranial pressure following severe head injury is unreliable, direct and continuous measurement of intracranial pressure is useful in the management of these cases. In 32 patients (ages 1-68 yrs) having severe head injury, simultaneous monitoring of ventricular-fluid pressure (VFP) and systemic arterial pressure (SAP) indicated that normal, moderate, and severe elevation of pressure occurred. Mortality was particularly high in the high pressure group. The monitoring procedure appeared to provide a useful guide to the effectiveness of therapeutic procedures, particularly since half of the Ss in the high pressure group showed initial evidence of less serious brain damage but deteriorated thereafter. Examination of the measurements showed that the response of SAP to elevated VFP was variable. Management of the patients included combined use of controlled hyperventilation, mannitol, and ventricular drainage. (23 refs.) - *M. S. Fish.*

*Institute of Neurological Sciences
Killearn Hospital
Glasgow, Scotland

MEDICAL ASPECTS -- Etiologic Groupings

Disease or disorders of metabolism, growth, or nutrition

956 **GORDON, JOHN E.; & SCRIMSHAW, NEVIN S.** Fetal malnutrition: Start of a continuum. *Hospital Practice*, 5(6):9, 1970. (Editorial)

The core of the problem of fetal malnutrition is prevention, long before pregnancy. Recurring cycles of early childhood malnutrition in developing countries will end only with early prevention extending back into the prenatal period when growth rates are highest and are qualitatively time-dependent. Fetal nutrition depends on an adequate nutrient source and on efficient delivery to the fetal host—the mother. The effects of malnutrition, before and after birth, critically influence the child's functional development. (No refs.) - *B. Berman.*

Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

957 **WAALER, PER ERIK; GARATUN-TJELDSTO, ODDVARD; & MOE, PETER JOHAN.** Genetic studies in glycogen-storage disease type III. *Acta Paediatrica Scandinavica,* 59(5):529-535, 1970.

Genetic analyses in 4 families with glycogen-storage disease (GSD) type III (selected from 14 Norwegian families with a total of 20 GSD cases) disclosed consanguinity in 3 families, a familial relation between 2 of them, and 6 instances of clinically demonstrable GSD plus 2 relatives who had died of probable GSD. Erythrocytes from 5 analyzed Ss revealed homozygote values of amylo-1.6-glucosidase activity, and from 8 parents of the Ss showed a mean activity only 30% that of normal controls. (The method of determining amylo-1.6-glucosidase activity seems reproducible and most GSD type III cases are easily diagnosed from its activity in erythrocytes.) Twenty of 50 of the patients' relatives (including siblings, parents, and siblings of parents and grandparents) showed the low enzyme activity of heterozygotes. All findings suggest GSD type III is an autosomal-recessive hereditary disease. (20 refs.) - *B. Berman.*

Haukeland Sykehus
Bergen, Norway

958 **DAHLQVIST, A.; GAMSTORP, I.; & MADSEN, H.** A patient with hereditary galactokinase deficiency. *Acta Paediatrica Scandinavica,* 59(6):669-675, 1970.

A boy hospitalized because of abnormal findings on a galactosemia test is the first reported case in Sweden of a non-Gypsy with galactosemia due to hereditary galactokinase deficiency. (Hereditary galactosemia—characterized by acute jaundice, liver cirrhosis, cataracts, and MR—is classically caused by a deficiency of galactose-1-phosphate uridyltransferase.) The S presented excessive urinary galactose and galactitol, galactosemia, and a virtual absence of red-cell galactokinase activity. Lens opacities, manifest at age 5 weeks, were the only clinical abnormality; other symptoms (insufficient weight gain and feeding trouble) were uncertain. The gene of this autosomal-recessive hereditary pathology was probably carried by the boy's parents, brother, and sister, all of whom showed half the normal red-cell enzyme activity. Fed a galactose-free diet (begun at age 3½ weeks), the S developed normally, with considerable lessening of lens opacity after 4 months. Various tests (including the fluorescence spot test for blood-cell enzyme activity) are available for screening for enzyme deficiencies. (36 refs.) - *B. Berman.*

University of Lund
Lund, Sweden

959 **OLEGARD, RAGNAR; & SVENNERHOLM, LARS.** Fatty acid composition of plasma and red cell phosphoglycerides in full-term infants and their mothers. *Acta Paediatrica Scandinavica,* 59(6):637-647, 1970.

Studies of the main lipid classes in 20 women in labor and in the umbilical-cord plasma of their newborn infants showed very small individual variations in blood phosphoglyceride fatty-acid pattern, thus supporting the view that, in the regulation of this pattern, environmental factors are far less important than an existing homeostatic mechanism. Determinations were made also of red-cell cephalin and lecithin, and all major lipid concentrations in maternal and cord plasma agreed with those in other countries. Concentrations of all polyunsaturated fatty acids in plasma phosphoglycerides and in red-cell lecithin and cephalins were identical for mothers and infants. Infants showed lower concentrations of parent fatty acids and linoleic and linolenic acids but correspondingly increased concentrations of the more polyunsaturated fatty acids. Red-cell lecithin for both mothers and infants showed a fatty-acid composition comparable to that in the corresponding plasma. All cephalins revealed more polyunsaturated fatty acids than did lecithins. The newborns disclosed no biochemical evidence of a deficiency in essential fatty acids. (59 refs.) - *B. Berman.*

University of Goteberg
Goteberg, Sweden

960 **HAMBRAEUS, LEIF; PALLISGAARD, GUNNAR; & KILDEBERG, POUL.** The Lowe syndrome: Observations on the amino acid metabolism in a 2-year-old affected boy. *Acta Paediatrica Scandinavica,* 59(6):631-636, 1970.

A 2-year-old boy with an oculo-cerebro-renal syndrome (Lowe's syndrome) presented a fairly selective renal aminoaciduria (revealed by ion-exchange chromatography analysis of the amino-acid pattern in blood, urine, and cerebrospinal

fluid). Born of healthy, non-related parents, the S showed severe psychomotor retardation, renal rickets, and renal acidosis. Urinalysis revealed excessive excretion of such amino acids as hydroxy-proline, proline, alanine, citrulline, lysine, and tyrosine. Normal concentrations of serum and cerebrospinal-fluid amino acid concentrations confirmed the renal origin of the aminoaciduria. This striking similarity with the aminoaciduria of premature infants suggested a tubular functional "immaturity" rather than specific toxic agents operating in Lowe's syndrome. Renal tubular acidosis (a probable result of low tubular bicarbonate threshold) was established by acid-base metabolism observations. The connection between the acidosis and aminoaciduria in this syndrome remains unknown. (18 refs.) - *B. Berman.*

University Hospital
Uppsala, Sweden

961 **LUND, H. T.; TRANSBOL, I.; & HORNUM, I.** A case of hypercalcemia and renal insufficiency in childhood sarcoidosis? *Acta Paediatrica Scandinavica,* 59(5):582-586, 1970.

A 13-year-old girl with sarcoidosis exhibited only hypercalcemia and renal insufficiency; physical examination and X-rays were all negative. Slit-lamp examination and renal biopsy disclosed hypercalcemia (tubular reabsorptions of calcium and the cortisone test affirmed this had a non-parathyroid origin), an undue amount of hypercalcuria, and discrete metastatic calcifications. Despite the absence of typical granulomas, a sarcoidosis diagnosis was justified by elevated serum β-globulin fraction and sedimentation rate, negative Mantoux results despite BCG immunization, chronic inflammatory alterations and giant cells disclosed by muscle biopsy, and normalized calcium metabolism and renal function deriving from prednisone therapy. (20 refs.) - *B. Berman.*

University Hospital
Copenhagen, Denmark

962 **CARTON, D.; DHONDT, F.; De SCHRIJVER, F.; SAMYN, W.; KINT, J.; DELBREKE, M.; & HOOFT, C.** Histidinemia. *Helvetica Paediatrica Acta,* 25(2):127-134, 1970.

A 16-year-old Algerian boy who was hospitalized with presumed leukemia had, in fact, histidinemia but exhibited no MR or speech disturbances which are frequently associated with this disorder. Chromatography of blood and urinary amino acids revealed a consistently elevated plasma level and urinary excretion of alanine but no urinary imidazole compounds. No skin histidase activity was noted. Presumably, the S was afflicted with an unrelated idiopathic thrombocytopenic purpura. Histidinemia is apparently another example of biochemical heterogeneity. (19 refs.) - *B. Berman.*

Rijksuniversiteit
Gent, Belgium

963 **LINDEMANN, ROLF; GJESSING, LEIV R.; MERTON, BRITA; LOKEN, AAGOT CHR.; & HALVORSEN, SVERRE.** Amino acid metabolism in hereditary fructosemia. *Acta Paediatrica Scandinavica,* 59(2):141-147, 1970.

Three infants with hereditary fructosemia had an acute clinical course (one fatal) similar to acute tyrosinosis. Vomiting, failure to thrive, hepatomegaly, edema, generalized aminoaciduria (especially tyrosine, phenylalanine, and proline), phenolyic acid excretion, and abnormal liver function became manifest when fructose was introduced into the diet. A fructose tolerance test is necessary to distinguish the condition from the amino acid defect. The hepatorenal dysfunction may be secondary to a disorder other than one in the tyrosine pathway. (19 refs.) - *E. L. Rowan.*

Rikshospitalet
Oslo 1, Norway

964 **SPRANGER, J. W.; KOCH, F.; McKUSICK, V. A.; NATZSCHKA, J.; WIEDEMANN, H. R.; & ZELLWEGER, H.** Mucopolysaccharidosis VI (Maroteaux-Lamy's disease). *Helvetica Paediatrica Acta,* 25(4):337-362, 1970.

Nine patients with mucopolysaccharidosis VI were observed, and ten cases from the literature were reviewed in order to define this condition. It is characterized by progressive gargoyle-like dysmorphism and growth failure after age 4, skeletal dysostosis, corneal opacities and normal intelligence. There is an increased urinary excretion of

dermatan sulfate (chondroitin sulfate B). An autosomal recessive mode of inheritance is hypothesized, but there is some variability in the phenotypic picture. (40 refs.) - *E. L. Rowan.*

University of Kiel
Kiel, Germany

965 **NILSSON, INGA MARIE; & OCKERMAN, P. A.** The bleeding disorder in hepatomegalic forms of glycogen storage disease. *Acta Paediatrica Scandinavica,* 59(2):127-133, 1970.

Studies for bleeding tendency were carried out in children with glycogen storage disease Type I (S=6), Type III (S=2), and Type IV (S=2). Except for 2 children aged 1 and 2 years, there was a marked and similar bleeding tendency in patients with Type I and Type IV disease. Findings in Type III were not remarkable. A prolonged Ivy bleeding time, a decreased platelet adhesiveness, and increased numbers of platelets, prothrombin, and fibrinogen were noted. Although these patients may appear to have a normal blood picture with routine testing, great care should be exercised in surgery or in response to accidental bleeding. (46 refs.) - *E. L. Rowan.*

Lasarettet
Lund, Sweden

966 **GRANT, D. B.; ALEXANDER, F. W.; & SEAKINS, J. W. T.** Abnormal tyrosine metabolism in hereditary fructose intolerance. *Acta Paediatrica Scandinavica,* 59(4):432-434, 1970.

An infant with hereditary fructose intolerance (HFI) had elevated plasma tyrosine and methionine levels and excessive urinary excretion of p-hydroxyphenyl-acetic and -lactic acids. Clinical and biochemical features included vomiting, jaundice, hepatomegaly, gross ascites, elevated serum transaminase levels, hypoproteinemia, proteinuria, and galactosuria. HFI was suspected when a detailed history was obtained. Glucose was then substituted for sucrose, and within 2 weeks, jaundice cleared, ascites were completely resolved, and the liver was soft and reduced in size. A diagnosis of HFI should be considered in any infant with biochemical anomalies which affect tyrosine metabolism. (8 refs.) - *J. K. Wyatt.*

The Hospital for Sick Children
London, W. C. 1. England

967 **PATEL, V.; TAPPEL, A. L.; & O'BRIEN, J. S.** Hyaluronidase and sulfatase deficiency in Hurler's syndrome. *Biochemical Medicine,* 3(6):447-457, 1970.

Analyses were made of tissues from 6 patients who died with mucopolysaccharidoses (including types I, II, and III) and of tissues from II controls of similar age. Patients with Hurler's syndrome had a deficiency of α- and β-galactosidase and a hyaluronidase deficiency. Sulfatase activity was 20 to 35% of normal in Type I cases, and 60 to 80% of normal in Types II and III. Two- to 5-fold increases were found in other lysosomal hydrolases, α- and β-glucosidase, β-xylosidase, β-N-acetylhexosaminidases, β-glucuronidase, α-mannosidase, cathepsins, A, B, C, and D, arylamidase, and acid phosphatase. The cerebral storage of gangliosides and other glycolipids observed in patients with Hurler's, Hunter's and Sanfilippos's syndrome may be explained by the deficiency of β-galactosidase. This deficiency is due to a lack of specific β-galactosidase isozyme rather than to an inhibitor. Accumulated glycosaminoglycase found in Hurler's syndrome may be due to deficiencies of hyaluronidase and sulfatase activities. (45 refs.) - *J. K. Wyatt.*

University of California
Davis, California 95616

968 **BOYLE, J. A.; RAIVIO, K. O.; ASTRIN, K. H.; SCHULMAN, J. D.; GRAF, M. L.; SEEGMILLER, J. E.; & JACOBSEN, C. B.** Lesch-Nyhan syndrome: Preventive control by prenatal diagnosis. *Science,* 169(3946):688-689, 1970.

Prenatal detection of Lesch-Nyhan syndrome was made in a fetus prior to the twenty-second week of pregnancy, and the pregnancy was successfully terminated. The mother's 2 previous pregnancies had resulted in a normal male child and an affected child. The screening procedure included radioautography performed on fibroblasts with (^{3}H)hypoxanthine and transabdominal amniocentesis during the eighteenth week of pregnancy with examination for heterochromatic bodies and ability to fix (^{3}H)hypoxanthine. Radioautography revealed 2 populations of cells, one with

hypoxanthine-guanine phosphoribosyltransferase (HGPRT) and one without. Amniotic cells did not contain sex chromatin, indicating a male fetus. Radioautography with (^{3}H)hypoxanthine of amniotic cells grown in culture for 3 to 4 weeks showed no appreciable uptake of (^{3}H)hypoxanthine in 3 separate determinations. Post-mortem fetal studies revealed no HGPRT activity in the tissues studied. Prenatal detection of Lesch-Nyhan syndrome at a time sufficiently early in pregnancy to permit termination appears feasible. (15 refs.) - *J. K. Wyatt.*

University of California School of Medicine
San Diego, La Jolla, California 92037

969 **WIESMANN, ULRICH; & NEUFELD, ELIZABETH F.** Scheie and Hurler syndromes: Apparent identity of the biochemical defect. *Science,* 169(3940): 72-74, 1970.

A laboratory technique makes possible the examination of the biochemical relation between the Hurler syndrome and other mucopolysaccharidoses. The most specific reported defect in Hurler cells is the absence of a factor required for normal mucopolysaccharide metabolism. Fibroblasts obtained from individuals with Scheie's syndrome are similar to those found in Hurler's syndrome in that the factor required to correct the defect in Hurler fibroblasts is not secreted. Although the defect in Scheie fibroblasts is not corrected by secretions from fibroblasts from Hurler patients, it is corrected with secretions from fibroblasts from normal individuals or from those with other disorders. Fibroblasts derived from biopsies from 2 Scheie patients (a brother and a sister; CAs 39 and 37 yrs, respectively) were markedly metachromatic when stained with toluidine blue O. When these fibroblasts were supplied with radiosulfate, they accumulated excessive intracellular radioactive mucopolysaccharide and turned it over relatively slowly. (14 refs.) - *J. K. Wyatt.*

National Institutes of Arthritis
and Metabolic Diseases
Bethesda, Maryland 20014

970 **BERMAN, JULIAN A.** Sex ratio in hyperphenylalaninemia. *New England Journal of Medicine,* 283(9):49, 1970. (Letter).

Of 42 families (57 individuals) with 1 or more members with hyperphenylalaninemia, 36 propositi (17 males, 19 females) had blood phenylalanine levels which ranged from 6 to 20 mg/100 ml. A spontaneous reversion to normal blood phenylalanine levels occurred in 6 propositi who were originally hyperphenylalaninemic. Transient hyperphenylalaninemia was observed in 1 sibling, and hyperphenylalaninemia occurred in 14 siblings. These data are at variance with the hypotheses that hyperphenylalaninemia occurs to a greater extent in males than in females. (2 refs.) - *J. K. Wyatt.*

Cook County Hospital
Chicago, Illinois 60612

971 **DOBSON, JAMES C.; WILLIAMSON, MALCOLM; & KOCH, RICHARD.** Sex ratio in hyperphenylalaninemia. *New England Journal of Medicine,* 283(9):491, 1970. (Letter)

The suggestion that the identification of twice as many males as females in the first 90 cases of the PKU Collaborative Study may be due to a higher incidence of males than females among the false-positive responses has not been corroborated. Of 16 patients who met biochemical criteria at the time of diagnosis but not 3 months later, 8 were female and 8 were male. The PKU Collaborative Study has made a concerted effort to identify and eliminate "false-positive" results from the sample. Biochemical criteria for patients receiving ordinary diets on which tentative diagnoses of PKU were based included serum phenylalanine levels of 20 mg/100 ml or higher on at least 2 occasions, normal serum tyrosine levels, and markedly high levels of urinary metabolites associated with classic PKU. Patients were given a standard protein load 3 months after admission to the study, and the same biochemical criteria were reapplied. Some patients received similar biochemical evaluations at 1 to 2 years of age. Further evidence is needed before an explanation of the disproportionate sex ratio can be made. (3 refs.) - *J. K. Wyatt.*

Children's Hospital
Los Angeles, California 90027

972 **LEWIS, P. D.; & MILLER, A. L.** Argininosuccinic aciduria. *Brain,* 93(2):413-422, 1970.

The urine of an MR boy (CA 16 yrs), who had episodes of somnolence associated with ataxia and

epilepsy, contained large amounts of argininosuccinic acid. A post-mortem study showed a marked deficiency of argininosuccinate lyase in liver enzymes. The brain contained abnormal astrocytes which resembled Alzheimer type II cells. Loss of neurons from the thalamus was gross. The patient had a slow early development, defective hearing, unsteadiness, drowsiness, unusual facial appearance, and a low hair line. He spoke with cerebellar dysarthria. At age 4 years, he had been found in a garden shed with a spilled bottle of nicotine beside him and was thought to be suffering from nicotine poisoning. The signs and symptoms presented seemed due to hyperammonemia. The large number of atypical astrocytic nuclei and the gross neuronal loss in the thalamus were the most striking neuropathological findings. (27 refs.) - *J. K. Wyatt.*

Hammersmith Hospital
London, W. 12, England

973 **BRUTON, C. J.; CORSELLIS, J. A. N.; & RUSSELL, A.** Hereditary hyperammonaemia. *Brain*, 93(2):423-434, 1970.

The most striking abnormality found in brain microscopy studies of 2 female cousins who suffered from hyperammonemia due to ornithine transcarbamylase deficiency was widespread formation of Alzheimer II glia. There was severe parenchymatous damage in the cerebral hemisphere of one child which was present, but much less evident, in the second child. One girl was SMR and the other was backward; both died before the age of 8 years. In these cases, hyperammonemia was not due to gross liver disease but to a more subtle and precisely defined inborn error of metabolism. Both patients were ill for most of their lives and had periodic attacks which began with headache, vomiting, and screaming and were followed by a period of lethargy and stupor. During their lives, the fundamental abnormality of these children was a gross deficiency of ornithine transcarbamylase, a liver enzyme. Concentrations of ammonia in the blood and cerebrospinal fluid were too high but returned to normal range when protein in the diet was drastically reduced. Comparison of these findings with those of a few other cases of hyperammonemia due to an inborn lack of a specific enzyme system in the urea cycle indicate that a detailed examination should be made of the nervous system of patients with any type of liver disease when extensive biochemical studies have been made during life. (17 refs.) - *J. K. Wyatt.*

Runwell Hospital
Wickford, Essex, England

974 **ANNAMALAI, AL.; & FERNANDEZ, M. PETER.** Muscular hypertrophy due to juvenile hypothyroidism: An unusual and curable complication. *Clinical Pediatrics*, 9(6):368-371, 1970.

Muscular hypertrophy may be observed in treated or untreated hypothyroidism or following the spontaneous remission of thyrotoxicosis, medical or surgical treatment of thyrotoxicosis, or therapeutic hypothyroidism. After 12 weeks of therapy with 60 to 90 mg/day of dessicated thyroid, the general appearance of a 15-year-old boy who had presented with dull apathy and a "prize fighter" appearance greatly improved. From childhood, the boy had stunted growth, drowsiness, poor appetite, and slow cerebration. His neck had a pseudo-webbed appearance due to hypertrophied free edges of the trapezii. An apparently well-developed musculature was associated with pronounced muscular hypertonia and a protuberant abdomen. This is the only case of myxedema with muscular hypertrophy of 222 cases reported over a 3-year period in one hospital. Muscular hypertrophy which accompanies hypothyroidism in adults is called Hoffman's syndrome. In children, it is called Debre-Semelaigne syndrome. In adults, hypothyroid muscular hypertrophy is generally localized, while in children, it is usually generalized. Recognition and treatment during the neonatal period can prevent fatality. Thyroid substitution therapy is the method of treatment for those who survive infancy. (16 refs.) - *J. K. Wyatt.*

Madras Medical College
Madras, India

975 **STUDNITZ, WILFRIED.** Cystathioninuria in children with neuroblastoma with and without metastasis. *Acta Paediatrica Scandinavica*, 59(I):80-82, 1970.

Urine samples from 20 patients (12 boys, 8 girls; CA 1 mo to 6 yrs) with neuroblastoma revealed increased amounts of catecholamines and/or their metabolites, but only 14 showed cystathioninuria. Four of the 14 Ss showed no metastasis; 2 without cystathioninuria had metastasis. Neuroblastoma children below age 1 year showed more frequent cystathioninuria. Results indicate that urinary

cystathionine in neuroblastoma cases is not necessarily an early sign of neuroblastoma or even evidence of metastasis. The origin of the cystathionine must await analysis of cystathionine content in tumor patients without cystathioninuria. (13 refs.) - *B. Berman.*

University of Lund
Lund, Sweden

976 **GOEDDE, H. W.; LANGENBECK, U.; BRACKERTZ, D.; KELLER, W.; ROKKONES, T.; HALVORSEN, S.; KIIL, RAGNHILD; & MERTON, BRITA.** Clinical and biochemical-genetic aspects of intermittent branched-chain ketoaciduria: Report of two Scandinavian families. *Acta Paediatrica Scandinavica,* 59(1):83-87, 1970.

Biochemical-genetic studies of the intermittent type of maple-syrup urine disease (MSUD)—also called branched-chain ketoaciduria—in 3 patients (normal intelligence) from 2 Norwegian families showed differences between the classical and intermittent types of MSUD. In the classical form, both parents have half the normal enzyme (branched-chain ketoacid oxidases) activities; in the intermittent type, only one parent shows a decrease. Atypical homozygous patients with clinical MSUD have no oxidase activity in peripheral blood cells; intermittent-type patients generally have residual activities. One child died at age 8 years during an acute acidotic attack; the mechanism of such attacks apparently involves hyperphenylalaninemia induced by the kinetic properties of phenylalanine hydroxylase. MSUD's genetic-heterogeneity mechanisms are not yet fully explicated. (18 refs.) - *B. Berman.*

University of Hamburg
Hamburg, Germany

977 **MEEUWISSE, G. W.; & LINDQUIST, B.** Glucose-galactose malabsorption: Studies on the intermediate carbohydrate metabolism. *Acta Paediatrica Scandinavica,* 59(1):74-79, 1970.

Studies of glucose-metabolism abnormalities in 2 children with glucose-galactose malabsorption (GGM)—a defective absorption of the monosaccharides, glucose and galactose, characterized by severe, watery diarrhea from birth—demonstrated that these aberrations were not specific for this disease but merely secondary to carbohydrate deprivation. Tests (intravenous-glucose and galactose-tolerance, and oral-fructose tolerance) were performed on the GGM Ss and 2 controls who had no signs of digestive or metabolic disease. In the GGM Ss, the removal rate of injected glucose was normal when dietary fructose was adequate (it was slow with limited amounts, and rapid with large quantities of carbohydrates administered prior to intravenous GTT). Oral-fructose tolerance tests showed similar results. Fructosemia was minor and non-dietary in origin; glucosemia, however, reflected lowered glucose tolerance with dietary deficiency of absorbable carbohydrate. Adequate intake of calories and carbohydrates eliminated the abnormal blood glucose. GGM patients possess a normal ability to adapt glucose metabolism to varying intakes of absorbable carbohydrates. (22 refs.) - *B. Berman.*

University of Lund
Lund, Sweden

978 **HALVORSEN, S.; STOKKE, O.; & ELDJARN, L.** Abnormal patterns of urine and serum amino acids in methylmalonic acidemia. *Acta Paediatrica Scandinavica,* 59(1):28-32, 1970.

A newborn girl with methylmalonic acidemia (MMA) permits comparison of this disease's clinical and chemical disturbances with those found in hyperglycinemia. At birth, the urinary amino-acid patterns seemed normal, but on the third day of life an almost generalized hyperaminoacidemia and hyperaminoaciduria were apparent. Dietary treatment was attempted, and serum and urine samples were taken before and after treatment. MMA serum levels were reduced, but at 6 weeks the infant died of a urinary-tract infection. Most prominent findings were the increased: lysine and glycine serum and urine levels; serum levels of leucine, isoleucine, valine, threonine, and glutamic acid; and valine, threonine, and ornithine urinary levels. New studies suggest MMA, along with propionic acidemia, are separate diseases subsumed under hyperglycinemia. (16 refs.) - *B. Berman.*

University of Oslo
Oslo, Norway

979 **De SCHRIJVER, F.** Het Sanfilippo syndroom (The Sanfilippo syndrome). *Acta Paediatrica Belgica,* 24(2):121-130, 1970.

Physical examination of a 4½-year-old boy admitted for MR revealed that he had hepatomegaly and coarse features. Berry's spot test indicated an increased urinary excretion of acid mucopolysaccharides. Predominant psychic deterioration connected with slight morphological deviations confirmed the presumed diagnosis of Sanfilippo's syndrome. Quantitative and qualitative study of the mucopolysaccharides provided further diagnostic evidence. The difficulty in classifying the different illnesses of the group is discussed as well as recent advances in enzymatic examination of these disorders. (14 refs.) - *G. Van Massenhove.*

Rijksuniversiteit-Gent
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980 **TAVEIRNE, J.** Het syndrome van Conradi (Conradi's syndrome). *Acta Paediatrica Belgica,* 24(2):139-150, 1970.

Three Ss of healthy and unrelated parents presented with Conradi's syndrome (congenital stippled epiphyses). One S exhibited rhizomelia, microcephaly, flexion contractures, congenital cataracts, skin anomalies, and stippled epiphyses which were visible at X-ray examination. The other 2 Ss (one with severe psychomotor retardation) suffer from the "forme fruste" of Conradi's syndrome: unilateral rhizomelia and stippled epiphyses. Conradi's syndrome is a rare congenital illness characterized by multiple and abnormal calcifications of the skeleton. These calcifications may be isolated but are mostly associated with a rhizomelia, a limitation of joint movements, skin lesions, and a congenital cataract. Patients with the complete syndrome usually die early in life. The life span of Ss with forme fruste is not threatened, but the patients bear the aftereffects. The pathogenesis of this syndrome is unknown. (9 refs.) - *G. Van Massenhove.*

Rijksuniversiteit-Gent
B-9000 Gent, Belgium

981 **CARTON, D.** G_{M1} gangliosidose, type II (G_{M1} gangliosidosis, type II). *Acta Paediatrica Belgica,* 24(2):75-82, 1970.

A male S with severe mental and motor retardation developed normally until age 1, after which he deteriorated progressively until death at age 3. Physical examination revealed no visceromegaly or eye disturbances. X-ray findings of the skeleton were normal. Biochemical investigations disclosed a severe deficiency of β-galactosidase in the peripheral leukocytes and liver tissue (5% of normal value). In brain tissue, the enzymic activity was only moderately decreased (60% of normal). Thin-layer chromatography revealed a pronounced accumulation of the G_{M1} ganglioside and its asialic derivative in brain tissue but not in liver tissue. On a clinical as well as biochemical basis, this variant of G_{M1} gangliosidosis is clearly distinguishable from the generalized G_{M1} gangliosidosis with neurovisceral involvement. The study of β-galactosidase in the leukocytes made it possible to detect the heterozygote carriers of the disease (the 2 parents, 4 other members of the family). (9 refs.) - *G. Van Massenhove.*

Rijksuniversiteit-Gent
B-9000 Gent, Belgium

982 **ATHAYDE, SCHNEEBERGER.** A terapeutica das encefalopatias metabolicas por desvios enzimaticos congenitos (Therapy for encephalopathies caused by congenital enzymatic deficiencies). *Revista Portuguesa para o Estudo da Deficiencia Mental,* 3(1):303-311, 1970.

Therapy for enzymatic deficiencies includes: administering the deficient enzyme or co-enzyme; administering the final member of an altered metabolic series or its substitutes; and excluding foods which are not conveniently metabolized or at least attempting to make their absorption and fixation difficult and their elimination easy. If it proves impossible to solve the basic metabolic problem, it is possible, in some instances, to compensate for secondary problems. Specific instances of these therapeutic approaches and details of the relevant treatment are provided. The first therapeutic approach may be used in Wilson's disease, in the apyridoxine-deficiency, pyridoxine-deficiency and pyridoxine-dependency syndromes, in Hartnup disease and in Von Gierke's disease. The second method can be used in some difficult to diagnose forms of pyridoxine dependency, in maple syrup urine disease, in Hartnup disease and in phenylketonuria. For the third method, a great number of practical details are enumerated with regard to the therapy of single diseases and syndromes. At least 13 metabolical encephalopathies may be treated by the above methods. (68 refs.) - *G. Van Massenhove.*

Centro de Saude Mental Infantile
Lisbon, Portugal

983 **BARBEAU, ANDRE; & FRIESEN, HENRY.** Treatment of Wilson's disease with L-dopa after failure with penicillamine. *Lancet,* 1(7657):1180-1181, 1970. (Letter)

Although D-penicillamine is the treatment of choice in Wilson's disease, L-dopa is recommended in those cases that show rapid neurological deterioration despite adequate chelation. A case is cited of a 15-year-old girl with hepatolenticular degeneration—diagnosed on the basis of rigidity, reduced intellectual function, tremor, and laboratory data—in whom neurological decline continued despite continuous D-penicillamine administration for 15 months. After a 2-month treatment with L-dopa (1,000 mg daily) and a peripheral decarboxylase inhibitor, rigidity and akinesis improved notably. (9 refs.) - *B. Berman.*

Royal Victoria Hospital
Montreal, Canada

984 **GOMPERTZ, D.; BAU, D.C.K.; STORRS, C. N.; PETERS, T. J.; & HUGHES, ELIZABETH A.** Localisation of enzymic defect in propionicacidaemia. *Lancet,* 1(7657):1140-1143, 1970.

A male Pakistani infant, who died at age 8 days, is one of 2 reported cases of propionicacidemia—an inborn metabolic deficiency of the enzyme propionyl CoA carboxylase that converts propionyl CoA to methylmalonyl CoA. Hospitalized with apnea, food regurgitation, and hypoglycemia, the infant showed severe acidosis and ketosis and was totally unresponsive during the last 4 days of life. Diagnosis had been made from propionic acid in the urine. At necropsy, the brain was soft, swollen, and stained yellow at the basal ganglia. Elevated plasma amino acids along with excessive urinary long-chain ketones demonstrated the presence, also, of ketotic hyperglycinemia, probably a secondary effect of the metabolic disturbance of CoA and its esters. Two doses (1 mg daily) of biotin, during the last 2 days of life, lessened the metabolic acidosis but produced no definite clinical improvement. (31 refs.) - *B. Berman.*

Hammersmith Hospital
London, W. 12 England

985 **KEIPERT, J. A.** Lipoid proteinosis. *Australian Paediatric Journal,* 6(3):135-141, 1970.

A 10-year-old Greek girl is the first reported case of lipoid proteinosis in Australia. The S presented the typical clinical and biological features of this rare syndrome. Hoarseness is the earliest sign, followed by cutaneous and mucosal lesions occurring in 2 overlapping phases, ending in a characteristic hyalinoid (probably a lipoglycoprotein) skin deposit. Yellow papules on the neck are common, as are atrophic depressed scars on the cheeks from delayed healing of impetigo and excretions. Intracranial calcification and fundal changes have been reported as well as involvement of the testicles, stomach, rectum, vagina, and viscera. The syndrome is distinguished from erythropoietic protoporphyria by the latter's burning sensations in exposed parts, progressing to irritation often associated with mental changes. Etiology is unknown and there is no specific treatment. The present case showed spontaneous improvement in hoarseness and skin and lip-mucosal lesions. (20 refs.) - *B. Berman.*

Royal Children's Hospital
Melbourne, Australia

986 **ZEE, PAUL; WALTERS, THOMAS; & MITCHELL, CHARLES.** Nutrition and poverty in school children: A nutritional survey of preschool children from impoverished black families, Memphis. *Journal of the American Medical Association,* 213(5):739-742, 1970.

Examination of a sample of 300 (12%) children from 2,427 preschool children of 994 black impoverished families in Memphis, Tennessee, revealed (in varying degrees): low birth weight; retarded growth (50% were below the twenty-fifth percentile for height and weight, 15% with head circumference below the second percentile); anemia (28% under 3 years had hemoglobin levels less than 10 gm/100 ml, with signs of iron deficiency; 25%, ages 3-6 years, had levels below 11 gm/100 ml); low serum albumin; inadequate bone development; low plasma vitamin-A levels (but no clinical signs of deficiency); excess of peripheral-blood eosinophils; and mild skin or respiratory-tract infections. Median annual income for these families was $1,838. Inadequate dietary intake contributed most to growth retardation and anemia in children. Evidence of such

malnutrition has come also from other investigations. Nutritional deficiencies are associated with low income among large numbers of Americans. Drastic ameliorative measures are needed. (18 refs.) - *B. Berman.*

St. Jude Children's Research Hospital
Memphis, Tennessee 38101

987 **AMERICAN MEDICAL ASSOCIATION COUNCIL ON FOODS AND NUTRITION.** Malnutrition and hunger in the United States. *Journal of the American Medical Association,* 213(2):272-275, 1970.

Malnutrition in the United States is now well-documented by Government reports, private group investigations, and media coverage. Malnutrition must be distinguished from hunger (inadequate amounts of food for short or long periods); there has been no measure of the extent of hunger or whether it has been severe enough to have physiological effects (it has impaired psychological health). Malnutrition (a state of impaired functional ability resulting from a discrepancy between biologic demands for essential nutrients and their supply to body tissues) may be primary (inadequate intake of nutrients) or secondary (an interference with ingestion, absorption, or utilization of nutrients because of stress). Malnutrition is probably more prevalent than hunger, though not as politically dramatic. Surveys have identified population groups and areas with nutritional problems and have named the malnutrition causes as poverty, illness, ignorance, indifference, loneliness, and mental health. Preschool children are the most vulnerable to its effects and iron deficiency is the most common example. Its effects on the individual and on society are devastating. Since malnutrition is a medical problem (hunger is not), there should be changes in national policy, special Medical Association actions, and messages to component societies designed to ameliorate the condition. (No refs.) - *B. Berman.*

535 North Dearborn Street
Chicago, Illinois 60610

988 **FROST, PHILLIP.** Diagnosis of the Lesch-Nyhan syndrome. *Journal of the American Medical Association,* 213(2):301, 1970. (Letter)

The hypoxanthine-guanine phosphoribosyl transferase deficiency is present in skin epithelial tissue, and mosaicism for this ailment is not discernible in female heterozygotes. Where it is not possible to make a quick assay of a blood sample, skin-biopsy diagnosis is useful. Skin specimens injected or incubated with labeled precursor may be stored indefinitely in formaldehyde until autoradiographs are to be prepared. (No refs.) - *B. Berman.*

No address

989 **ROELS, OSWALD A.** Vitamin A physiology. *Journal of the American Medical Association,* 214(6):1097-1102, 1970.

Despite the low cost of vitamin A, its deficiency and protein malnutrition are the most serious nutritional-deficiency diseases in the world. Chemical structure and synthesis of the vitamin have been elucidated, but, except for its function in the visual cycle, its metabolic role is yet unexplicated. Early in this century, it was determined that a fat-soluble factor "A" was essential for growth, survival, and prevention of xerophthalmia in rats. Research made clear: its absorption, transport, and storage; its transformation (along with the provitamins A) in body fluids into the lipoprotein form; and its "normal" serum levels. George Wald in 1967 explained the stereochemical changes in the vitamin-A molecule chain involved in the nervous excitation transmitted by the optic nerve to the brain as part of the visual cycle. Experimental and clinical work has further elucidated the vitamin's role in dark adaptation, night blindness, xerosis of conjunctiva and cornea, kwashiorkor, and the need to supplement even high-protein diets with vitamin A. Vitamin-A depletion also plays a role in such diseases as cirrhosis, rheumatic fever, infectious hepatitis, pyrexia, pneumonia, and in diseases where fat absorption is defective (celiac disease, sprue, cystic fibrosis, and giardiasis). A caution is noted on excessive use of vitamin A, with such resulting toxic, sometimes fatal, manifestations as hypervitaminosis A and hypercarotenosis. (18 refs.) - *B. Berman.*

Columbia University Geological Observatory
Palisades, New York

990 **BARNESS, LEWIS A.; & MORROW, GRANT.** Clinical clues to diagnosis of

metabolic disorders. *Clinical Pediatrics*, 9(10):605-608, 1970.

Inborn errors of metabolism can often be detected in the physician's office if a high index of suspicion is present. Infants with a positive family history, seizures, unusual appearance, sexual ambiguity, persistent jaundice, edema, vomiting, or acidosis should be subjected to several simple screening tests. Urine can be tested for protein and reducing substances, subjected to a ferric chloride test, and looked at microscopically. Stools should be tested for fat, protein, pH, and reducing substances. Appropriate blood tests are also available. A positive screening test is not a diagnosis; further documentation is necessary when a positive screen is obtained. (No refs.) - *E. L. Rowan.*

University of Pennsylvania School of Medicine
Philadelphia, Pennsylvania 19104

991 **FOGELSON, M. HAROLD.** How to detect maple-syrup urine disease in newborn infants. *Clinical Pediatrics*, 9(9):538, 1970.

Because of cost, rarity of the disease, and time factors, specific public health screening of newborns for maple-syrup urine (MSU) disease is not presently warranted. However, when the early symptoms of lethargy, resistance to feeding, respiratory disturbances, convulsions, hypertonicity, neurologic distress, and fading of the Moro response occur, screening should be done at age 5 to 7 days. Screening should also be carried out on newborn siblings of children with MSU disease and newborn siblings of children who died in infancy from unknown causes. Available screening tests include the 2,4-dinitrophenylhydrazine urinary reaction, amino acid paper chromatography of urine, and Guthrie inhibition assay modified for blood leucine. MSU disease is diagnosed on the basis of blood elevation of valine, leucine, and isoleucine up to 50 times the normal levels and by the presence of their keto acids, a maple syrup odor to the urine, and increased urinary excretion of keto acids. Antenatal diagnosis could use cultured fetal cells obtained by amniocentesis. (4 refs.) - *J. K. Wyatt.*

University Affiliated Clinical Program for the
Mentally Retarded
295 Erkenbrecher Avenue
Cincinnati, Ohio 45229

992 **GOKULANATHAN, K. S.; & VERGHESE, K. P.** Sociocultural malnutrition: Syndrome of nutritional imbalance, growth disturbances and chronic infection. *Clinical Pediatrics*, 9(8):439-442, 1970.

Sociocultural evaluation of a South Indian agrarian community on the threshold of industrialization revealed dissociation of cultural values, decay of traditional modes of life, disruption of large family units, and cross-cultural confusion. Among 390 children from the high and middle socioeconomic group in this community, 90% had respiratory problems which had begun by the ninth month, 20% had gastrointestinal problems, and all appeared tall and thin and had highly-strung apathetic attitudes. The children had normal height curves but growth in weight was substandard. Nutrition studies showed a general nonchalance toward breast feeding, poorly administered bottle feeding, prominent use of processed and heavily advertised foods, and the use of milk, juices, and fruits at the expense of meats and vegetables. This sociocultural gap in food habits reflects the impact of technology on persons unable to use technologic advances to modify and maintain adequate nutritional habits. Sociocultural malnutrition can occur in communities undergoing rapid urbanization and requires periodic evaluation of dietary patterns and growth performance. (12 refs.) - *J. K. Wyatt.*

9430 Lanham-Severn Road
Seabrook, Maryland 20801

993 **PERRY, THOMAS L.** Phenylketonuria and glutamine. *New England Journal of Medicine*, 282(26):1490, 1970. (Letter)

The use of an animal model for the study of the effects of PKU in humans is questioned since tyrosinemia as well as PKU is produced in rats fed large amounts of phenylalanine, and no learning deficit could be demonstrated in such a group of animals which were tested later in life after phenylalanine feeding was stopped. The use of monkeys to explore further the glutamine hypothesis of MR in PKU may be profitable since learning defects persist in these animals long after the excessive dietary intake of phenylalanine has been stopped. (3 refs.) - *M. S. Fish.*

University of British Columbia
Vancouver, British Columbia, Canada

994 **DIERKS-VENTLING, CHRISTA; & CONE, A. LYNN.** Phenylketonuria and glutamine. *New England Journal of Medicine,* 282(26):1490, 1970. (Letter)

A recent suggestion that low glutamine plasma levels may be a possible cause of MR in phenylketonuria (PKU) has prompted a report of animal data on artificial PKU in the rat. The infant rats placed on a 5% phenylalanine diet showed a slight increase in brain glutamine synthetase activity at day 21 but a 30% decrease at day 56. Testing revealed a behavioral deficit for the low-phenylalanine diet group when compared with controls. The use of the animal model for data on humans can be questioned, but it can provide valuable guidelines. (3 refs.) - *M. S. Fish.*

Rosewood State Hospital
Owings Mills, Maryland 21117

995 **OYANAGI, KAZUHIKO; MIURA, RYOICHI; & YAMANOUCHI, TOYOSHIGE.** Congenital lysinuria: A new inherited transport disorder of dibasic amino acids. *Journal of Pediatrics,* 77(2):259-266, 1970.

A new transport disorder of dibasic amino acids has been observed in 2 female sibs with severe mental and physical retardation and a malabsorption syndrome. The Ss, 10- and 18-year-old female sibs with maternal and paternal grandmothers who were first cousins, were found to have hyperdibasicaminoaciduria (lysine, arginine, and ornithine). Serum levels of these materials were lower than those in control Ss, and urinary excretion rates and serum levels of cystine were within the normal range. Both Ss were small in stature and severely MR but had no atrophy of muscles and no apparent cardiovascular or nervous system abnormalities. Thin-layer chromatography revealed the high excretion levels of the 3 dibasic amino acids, and determination, after loading, of lysine showed urinary levels to be increased both before and after loading. The disorder may be due to impairment of renal tubular reabsorption associated with defective intestinal absorption. The mode of inheritance of the disorder is under investigation. (14 refs.) - *M. S. Fish.*

Aomori Prefectural Central Hospital
Nagashima Aomori, Japan

996 **HORTON, WILLIAM A.; & *SCHIMKE, R. NEIL.** A new mucopolysaccharidosis. *Journal of Pediatrics,* 77(2):252-258, 1970.

A new variant of mucopolysaccharidosis, distinct from known types of the disorder, has been found in 2 sibs. The Ss were a 13-year-old Caucasian male and his 11-year-old sister. Each had only part of the clinical and biochemical features associated with other known forms of the disease. While corneal clouding (observed by slit lamp examination) and soft tissue contractures were present in the 2 Ss, other clinical symptoms usually associated with other types of the disease (dwarfism, retardation, and cardiovascular involvement) were absent. While the urinary excretion pattern of the sibs (excessive amounts of heparitin sulfate and chondroitin sulfate B) was similar to that found in Hurler's and Hunter's syndromes, the occurrence of the disorder in male and female sibs ruled out the latter type, known to be an X-linked recessive disorder. Although, like the present 2 cases, Hurler's syndrome is an autosomal recessive disease, the lack of typical clinical and radiographic features characteristic of Hurler's syndrome, but absent in the 2 sibs, indicates the presence of a new type of the disorder. (36 refs.) - *M. S. Fish.*

*Kansas University Medical Center
Kansas City, Kansas 66103

997 **MATSUDA, ICHIRO; SUGAI, MOTONOBU; & KAJII, TADASHI.** Ornithine loading test in Lowe's syndrome. *Journal of Pediatrics,* 77(1):127-129, 1970.

A study of the family of a 6-year-old male with oculocerebrorenal (Lowe's) syndrome suggests that the disorder is not a single entity transmitted only on an X-linked recessive basis. The S was MR and had metabolic acidosis resulting from bicarbonate reabsorption (probably due to deficient function in the proximal renal tubules), along with other features typical of the syndrome: hypotonia, failure to thrive, vitamin D-resistant rickets, and repeated stereotypic movements of the hands. Ornithine loading tests of the S, his parents, and an 8-year-old sister showed that only the S and the father had considerable increases in excretion of several amino acids. Although the father was apparently otherwise normal, the possibility of his being a heterozygote as suggested by the aminoaciduria

indicates that a Y-linked or autosomal recessive inheritance may be involved. (8 refs.) - *M. S. Fish.*

Hokkaido University School of Medicine
Sapporo, Japan

998 **SAGEL, INGE; ORES, RICHARD O.; & YUCEOGLU, AYSE M.** Renal function and morphology in a girl with oculocerebrorenal syndrome. *Journal of Pediatrics,* 77(1):124-127, 1970.

A case of oculocerebrorenal (Lowe's) syndrome, a genetically inherited disorder once believed to be limited to males, is described in a female infant. At 18 months of age the S had symptomatology characteristic of this syndrome: MR, hypotonia, persistent systemic acidosis, hyperaminoaciduria, and corneal opacities. Studies of renal function and morphology indicated that the acidosis was caused by a low bicarbonate threshold and decrease in maximal tubular reabsorption of bicarbonate in the proximal tubule. The latter, by electron microscopy, was found to have striking abnormalities characterized by round and enlarged mitochondria and sparse and distorted mitochondrial cristae. The occurrence of the functional defects at the same site of these ultrastructural changes suggests an interrelation. (10 refs.) - *M. S. Fish.*

New York Medical College
1 E. 105th St.
New York, New York 10029

999 **FRASIER, S. DOUGLAS; HILBURN, JEAN M.; & SMITH, FRED G., JR.** Dwarfism and mental retardation: The serum growth hormone response to hypoglycemia. *Journal of Pediatrics,* 77(1):136-138, 1970.

The pathogenesis of dwarfism associated with MR does not appear to be related to functional abnormalities in growth hormone secretion. Of 81 institutionalized MRs, matched for sex, age, and level of sexual development (58 with growth retardation and 23 of normal height) and examined in terms of serum growth hormone response to insulin-induced hypoglycemia, no differences in the 2 groups were observed for fasting, peak, and increased serum concentrations of growth hormone. Seven test Ss, however, had impaired growth hormone response, but the incidence was not statistically significant. The conclusion that growth retardation and impaired response could not be related concurs with other observations of impaired growth hormone response to hypoglycemia in children having normal growth hormone function. (9 refs.) - *M. S. Fish.*

Los Angeles County-University of
Southern California Medical Center
Los Angeles, California 90033

1000 **SIMILA, S.** Intravenous proline tolerance in a patient with hyperprolinaemia type II and his relatives. *Helvetica Paediatrica Acta,* 25(3):287-292, 1970.

The biological half-life of proline in blood and the urinary output of proline and Δ_1-pyrroline-5-carboxylic acid (5PC) after intravenous proline injection was determined in a 9-year-old boy with hyperprolinemia type II, his heterozygote twin sisters, and 4 controls. The proline half-life in the heterozygotes (548 and 547 min) differed from that in the controls (338±29 min); there was no difference in urinary proline excretion between heterozygotes and controls; neither group excreted 5PC. In the boy, urinary excretion of proline and 5PC increased during the test, and probably all proline was excreted as proline and 5PC. The long half-life of proline in the blood (3,600 min) reflects mainly the glomerular filtration rate and only slightly the capacity to catabolize proline. Excretion of 5PC suggests absence of 5PC dehydrogenase. The very high plasma level of proline and the only slightly increased urinary excretion of 5PC during the proline test may indicate a partial deficiency of proline oxidase, which catalyzes the conversion of proline to 5PC or may be explained by an increased intracellular concentration of 5PC. (11 refs.) - *Journal abstract, edited.*

University of Oulu
Oulu, Finland

1001 **PONTE, C.; FRANCHIMONT, P.; GAUDIER, B.; NUYTS, J. P.; RYCKEWAERT, P.; DECONINCK, B.; BONTE, C.; & DEBRUXELLES, P.** Le dosage radio-immunologique de l'hormone de croissance plasmatique dans les retards

staturaux: Resultats enregistres dans 43 cas apres stimulations par l'insuline et par l'arginine (Radio-immunologic measurement of plasma growth hormone in cases of retarded growth: Results recorded in 43 cases following stimulation by insulin and arginine). *Archives Francaises de Pediatrie*, 27(6):585-601, 1970.

Plasmatic growth hormone levels were measured after insulin and arginine stimulation in children with a normal height and in 43 cases of statural insufficiency. The latter had been classified as idiopathic hypopituitarism (6 cases), gonadic dysgenesia (2 cases), osseous dwarfism (3 cases), primitive hypothyroidism (8 cases), affective deficiency states (4 cases), and essential growth retardation (20 cases). It was found indispensable to take multiple blood specimens over a long period of time, before being able to ascertain the absence of any reactivity to a stimulus. Almost all the results separated the control Ss from the children with pituitary dwarfism. But sometimes a limit response requires explanation in terms of the context. Insulin and arginine stimulation tests can give conflicting responses in children with clearly normal pituitary functions, but this atypical response sometimes denotes a partial somatotrope deficiency. This possibility is especially frequent in primitive hypothyroidism and in affective frustrations, where the somatotrope activity is reversibly reduced. Finally, growth hormone measurement makes possible detection of somatotrope defects among the essential dwarfisms, but in this study, they appeared to be relatively few. (38 refs.) - *Journal abstract, edited.*

Hopital Calmette
Lille, France

1002 HOOFT, C.; CARTON, D.; BROEKAERT, E.; DEVOS, E.; & De SCHRIJVER, F. Les enfants de meres phenylcetonuriques (Children of phenylketonuric mothers). *Acta Paediatrica Belgica*, 24(1):5-19, 1970.

Of 3 MR children born of a phenylketonuric mother, one presented with microcephaly and staturo-ponderal retardation; the other 2 had cranial perimeters below the tenth percentile. A fourth deceased child was also MR. Since the father is normal, all children are non-phenylketonuric heterozygotes. The brain damage is due to the toxic effect of the hyperphenylalaninemia of the mother. Of the more than 100 children of some 30 mothers (reported in the literature), only one child had a normal IQ. Microcephaly, prenatal and postnatal staturo-ponderal retardation, convulsions, and congenital malformations are recorded frequently. Brain damage and resulting MR is acquired prior to birth, while in the phenylketonuric child, the brain damage develops after birth. A systematic examination of the mother for phenylketonuria should be performed in the case of every child with MR of unknown etiology, especially when the child is microcephalic or when other siblings are similarly affected. It is evident that the problem of the phenylketonuric mother will become more important, since the methods of early detection and treatment will make it possible to obtain an increasing number of phenylketonuric women with normal or quasi-normal IQ and normal fertility. (33 refs.) - *K. Baer.*

Akademisch Ziekenhuis
9000-Gent, Belgium

1003 VIGNERON, C.; MARCHAL, C.; DEIFTS, C.; VIDAILHET, M.; PIERSON, M.; & NEIMANN, N. Deficit partiel et transitoire en galactokinase erythrocytaire chez un nouveau-ne: Etude biochimique (Partial temporary deficiency of erythrocytic galactokinase in a newborn: Biochemical study). *Archives Francaises de Pediatrie*, 27(5):523-531, 1970.

Congenital galactosemia was suspected in a 4-day old newborn who presented vomiting and the presence of urinary reducing substances other than glucose. The diagnosis was invalidated, however, by a normal level of galactose-uridyl transferase activity in the erythrocytes. Study of the galactose metabolism showed a defect of the galactokinase activity in the erythrocytes. A diet without galactose was given during the first 5 months, when a satisfactory restoration of normal values of enzyme activity was reached. Other erythrocyte levels were normal, and no hepatic insufficiency was observed. (23 refs.) - *K. Baer.*

Centre Regional de Transfusion
54 Nancy, France

1004 LARBRE, F.; HARTEMANN, E.; GUIBAUD, P.; COLLOMBEL, C.; &

GUERRIER, G. Glycinose avec acidocetose a revelation tardive et a evolution favorable (Glycinosis with ketoacidosis characterized by a late appearance and a favorable course). *Archives Francaises de Pediatrie*, 27(5):483-499, 1970.

A case of hyperglycinemia-hyperglycinuria with recurrent ketoacidosis is reported. The clinical features were: relatively late onset of the disease (first attack of ketoacidosis occurred at the age of 6 months); absence of serious vital and functional involvement (the child, now 7 years old, presents no pondero-statural retardation and is leading a normal life at 7 years of age); the rare occurrence of acute ketoacidosis crises (only 2 occurred, however, both were dramatic). The biological examinations show permanent hyperglycinemia and hyperglycinuria, associated with hypo-oxaluria. The results of the various loading tests with aminoacids are consistent with a disorder affecting the conversion of glycine into serine as the cause of the glycinosis; the anomalies of the glyoxalate metabolism seem to be related; the ketogenic effect of certain aminoacids, which is attenuated by glutamic acid, does not explain the ketoacidosis. (30 refs.) - *Journal summary, edited.*

Hopital d'Enfants Debrousse
69-Lyon-5e, France

1005 TONDEUR, M.; VAMOS-HURWITZ, E.; & LOEB, H. Contributions recentes de la microscopie electronique et de la culture de tissus dans l'etude de certaines maladies de stockage: Mucopolysaccharidoses et lipidoses (Recent contributions of electron microscopy and of tissue culture to the study of some storage diseases: Mucopolysaccharidoses and lipidoses). *Acta Paediatrica Belgica*, 24(3-4):355-384, 1970.

In mucopolysaccharidoses and lipidoses, ultrastructural and enzymological studies of biopsy material from different organs as well as the study of skin fibroblast from tissue cultures have proven to be of major importance in the understanding of etiopathogenic phenomena. The diseases are characterised by the existence of an intralysosomal storage and, in most cases, by an acid hydrolase deficiency. Accordingly, they may be considered congenital lysosomal diseases. The metabolic disorders persist in tissue culture and result in characteristic morphologic and biochemical changes. Moreover, the mode of inheritance can be determined through the presence of certain anomalies in the heterozygotes. In certain mucopolysaccharidoses (types I to III), the correction of the metabolic defect can be obtained by mixing cultures from different genotypes. Finally, amniotic cell culture enables the consideration of the possibility of antenatal detection of both groups of diseases. (115 refs.) - *Authors' abstract, edited.*

Free University of Brussels
Brussels, Belgium

1006 VIS, H. L.; THIRIAR, M.; & CASMAN-HENRY, F. Le depistage systematique de la phenylcetonurie: Quelques reflexions apres cinq ans d'activities du Centre depistage de Bruxelles, 1965-1970 (Systematic screening for phenylketonuria: Report of 5 years activity of the Brussels Screening Center, 1965-1970). *Acta Paediatrica Belgica*, 24(3-4):211-221, 1970.

The screening of children for phenylketonuria (PKU) is of interest, because proper dietetic treatment of children suffering from the disorder prevents brain damage. Screening of more than 117,000 newborn babies in Belgium over a 5-year period resulted in the discovery of 21 cases, in whom treatment consisting of a phenylalanine-deficient diet maintained the development quotient or intelligence quotient at generally close to normal values; some retardation of growth was observed as the principal side effect. (14 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

1007 VAINSEL, M.; & VIS, H. L. Etude des formes normo- et hypocalcemiques du rachitisme carentiel infantile (A study of the normo- and hypocalcemic forms of common rickets in children). *Acta Paediatrica Belgica*, 24(3-4):401-413, 1970.

Two forms of common rickets (normcalcemic and hypocalcemic) can be distinguished in children. The classical physiopathological concept assumes that, in the normocalcemic form, a parathyroid response takes place and maintains

calcemia at a normal level. Study of children suffering from common rickets revealed that: classifying the rickets into 2 groups, based on the value of plasma calcium, is statistically difficult; hypocalcemia was rarely observed in patients beyond the age of 14 months; radiological signs of rickets were quite similar in both groups, with bone involvement equally marked; and the renal tubular reabsorption of phosphate was similarly depressed in both groups. The parathyroid hyperplasis hypothesis is not entirely satisfactory. (28 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

1008 **ARTHUR, L. J. H.; & HULME, J. D.** Intelligent, small for date baby born to oligophrenic phenylketonuric mother after low phenylalanine diet during pregnancy. *Pediatrics,* 46(2):235-239, 1970.

Urinary tests for phenylketones in the mother may provide a better diagnostic guide to danger of fetal brain damage from phenylketonuria (PKU) than levels of blood phenylalanine. The S was a 26-year-old pregnant female with an IQ of 65 (Revised Stanford Binet Intelligence Scale) who was discovered on a routine Phenistix urine test to have undiagnosed PKU. Urinary excretion of phenylalanine and tyrosine was 10-12.5 mg/100 ml and 0.4-0.6 mg/100 ml, respectively. At 22 weeks a low phenylalanine diet (30 mg/kg/day) was begun; it kept the blood levels of phenylalanine between 2 and 6 mg/100 ml; Phenistix tests became negative. At 38 weeks, pregnancy was terminated by cesarean section due to failure of the fetus to grow well, and a 4-pound, 4-ounce female with no observable abnormalities except the low birth weight and the presence of a single umbilical artery was delivered. The child developed normally, the developmental quotient being 98 at 10 months of age; intelligence appeared to be normal. While dietary restriction may have led to fetal malnutrition, the recovery was excellent. These results, however, do not indicate if normal intelligence was achieved as a result of the diet or in spite of it. (26 refs.) - *M. S. Fish.*

Derbyshire Children's Hospital
Derby, DEI 3BA, England

1009 **O'BRIEN, DONOUGH; & GOODMAN, STEPHEN I.** The critically ill child: Acute metabolic disease in infancy and early childhood. *Pediatrics,* 46(4):620-626, 1970.

Collectively, the group of inborn errors of metabolism which can seriously affect the newborn infant comprises a significant number of disorders, and prompt diagnostic approaches are important if they are to be treated successfully. Individually, these disorders are rare and usually relate to specific problems in the metabolism of amino acids, carbohydrates, or lipids; however, simple, accurate, and inexpensive diagnostic procedures are often available, and the pediatrician can easily add other tests to the group with which he is now familiar. Present techniques can provide accurate results from small urine and blood samples, and many of these tests are available in the average clinical laboratory. Other more complicated tests can be carried out in major medical centers, and specialized laboratories usually can, on request, promptly perform the more involved assays. (34 refs.) - *M. S. Fish.*

University of Colorado Medical Center
Denver, Colorado 80220

1010 **YU, J. S.; & O'HALLORAN, M. T.** Atypical phenylketonuria in a family with a phenylketonuric mother. *Pediatrics,* 46(5):707-711, 1970.

A family study has demonstrated the difficulty of distinguishing between the carrier state of classical and atypical phenylketonuria (PKU) by the use of conventional testing procedures. Phenylalanine tolerance tests of 3 children and their parents indicated that the mother had classical PKU and the father was heterozygous for the PKU gene – a rare mating having a 1:100,800 chance of occurrence. Of the 3 children, 2 had atypical forms of the disease and the third was a heterozygote. Intrauterine damage due to the mother's PKU likely was responsible for MR and microcephaly in the 3 children. Whether the variety of forms of atypical PKU are due to multiple alleles at the phenylalanine hydroxylase locus or to the effects of one or more modifying genes cannot be assessed by conventional techniques, and infants not genotypically PKU may suffer retardation due not only to *in utero* effects but to additional phenylalanine loads from the milk of a PKU mother. (22 refs.) - *M. S. Fish.*

Royal Alexandra Hospital for Children
Camperdown, New South Wales, 2050 Australia

1011 SCRIVER, CHARLES R. Vitamin B_{12} dependency and cobalt-dependent metabolism. *Pediatrics*, 46(4):493-496, 1970. (Commentary)

Vitamin B_{12} dependency comprises a group of specific disorders of cobalamin-dependent metabolism and is part of the more general class of vitamin dependency disorders; these are considered to involve nutritional defects which are gene-dependent. In such conditions, vitamin intake required to maintain health is much higher than normal and the dependency is considered to be inherited. The ability to convert the vitamin to its active form, the coenzyme, which can then react with an enzyme protein, the apoenzyme, can be inhibited in a number of ways. Vitamin B_{12} which includes 3 known active forms of cobalamin that are present in mammalian tissues, forms coenzymes required for certain reactions involving transfer of methyl and hydrogen. If the conversion of the vitamin to the coenzyme is disturbed, the nutritional intake may have to be raised considerably, even as high as 1,000 μg/day (1μg/day normal adult requirement). Numerous recent studies are providing information about specific disorders of cobalamin-dependent metabolism; several of the disturbances recognized so far involve the metabolism of methylmalonic acid. (21 refs.) - *M. S. Fish.*

McGill University - Montreal Children's Hospital Research Institute
Montreal 108, Quebec, Canada

1012 NEWCOMBE, DAVID S. The urinary excretion of aminoimidazolecarboxamide in the Lesch-Nyhan syndrome. *Pediatrics*, 46(4):508-512, 1970.

Measurement of increased urinary excretion of aminoimidazolecarboxamide (AIC), an intermediate in purine synthesis, can provide a screen for disorders of purine and/or folate metabolism including the Lesch-Nyhan syndrome. A study of AIC excretion patterns in 5 patients with this syndrome, but with no clinical evidence of megaloblastic anemia, showed that the mean AIC levels were 12.03±6.9 mg AIC/mg creatinine (mean normal level is 1.2±0.6 mg AIC/mg creatinine). Serum folate levels were within the normal range. The determination of urinary AIC/creatinine ratios offers the advantage of detecting derangements in both purine and folate metabolism and is not affected by exogenous purine intake, in contrast to the uric acid/creatinine procedure which detects only purine disorders. A combination of the 2 methods could distinguish between a purine and a folate derangement. (21 refs.) - *M. S. Fish.*

University of Vermont College of Medicine
Burlington, Vermont 05401

1013 PITT, DAVID. Preliminary results of screening for metabolic errors in Australia. *Medical Journal of Australia*, 1:28-29, 1970.

Although the Guthrie test for phenylketonuria (PKU) in infants is reaching more babies and finding more cases earlier, the additional use of other procedures may be effective for more thorough screening. Of a group of 6,792 retarded patients in institutions in Australia who were screened (Guthrie test) for PKU, the test was positive in all 24 Ss known to have the abnormality and revealed an additional 4 previously suspected cases. Most major maternity hospitals in Australia are now utilizing the Guthrie test for screening newborns, and of 181,158 tests, 21 confirmed cases of PKU have been found (1:8,600). An unexpectedly high incidence (1.44:1,000) of urinary abnormalities has been found in New South Wales, including 7 cases of PKU (1:13,000). Many of these were identified by the filter paper method of Berry which has been in wide use in that area. Advantages of the Guthrie test include ability to perform tests in obstetric hospitals where coverage can be 100% and the absence of the need to have the mother mail urine samples (on absorbent paper strips) to a laboratory for processing; however, ideally, both types of tests might be useful in screening, since few infants would escape both methods and the Berry procedure might aid in uncovering other disorders, as has occurred in New South Wales. (6 refs.) - *M. S. Fish.*

Children's Cottages
Kew, Victoria 3101, Australia

1014 NATIONAL ASSOCIATION OF RETARDED CHILDREN. PUBLIC HEALTH SERVICES COMMITTEE.

Undernutrition in the infant as a cause of mental retardation. *Mental Retardation News,* 19(10):2, 1970.

Studies of humans and animals have indicated that inadequate nutrition can cause permanent damage to the developing brain. Late pregnancy and the neonatal period are most likely the times when the effects of undernutrition are the most critical. While studies in underdeveloped countries tend to support experimental findings in animals that permanent defects in brain function can result from severe undernutrition at an early age, various reports indicate that a number of areas in the United States are also "underdeveloped" in this sense. Approximately 10 million Americans do not have enough to eat, and the recent White House Conference on Food, Nutrition, and Health also emphasized the magnitude of this problem. The National Association for Retarded Children has taken the position that in order to reduce the magnitude of this problem food assistance programs must include infants, preschool children, and pregnant and nursing mothers. (No refs.) - *M. S. Fish.*

Minneapolis, Minnesota

1015 GUTTLER, FLEMMING; OLESEN, ERLING S.; & WAMBERG, ERIK. Diurnal variations of serum phenylalanine in phenylketonuric children on low phenylalanine diet. *American Journal of Clinical Nutrition,* 22(12):1568-1570, 1969.

Diurnal variations of serum phenylalanine in phenylketonuric (PKU) children are diet dependent and, under certain dietary conditions, may be opposite from those observed in normal children. The Ss were two 3-year-old PKU children and 2 normal children of comparable age. The PKU Ss received 20 mg/kg body weight in the diets; the controls were on a normal diet. Fluorimetric determination of blood phenylalanine and tyrosine levels obtained twice daily indicated that, when the PKU Ss were fed 4 times a day, tyrosine values varied in a manner similar to those of the controls; however, phenylalanine levels varied in the opposite direction — the concentrations for the PKU Ss were considerably higher in the morning than in the evening, although when a 5-meal/day diet was instituted, the morning to evening differences were also eliminated. The magnitude of these diurnal variations indicates that conditions for blood sampling must be standardized if phenylalanine values are to be utilized as a guide for the adjustment of the diet of PKU patients. (4 refs.) - *M. S. Fish.*

John F. Kennedy Instituttet
Glostrup, Denmark

1016 FISCH, ROBERT O.; TORRES, FERNANDO; GRAVEM, HOWARD J.; GREENWOOD, CAROL S.; & ANDERSON, JOHN A. Twelve years of clinical experience with phenylketonuria. *Neurology,* 19(7):659-667, 1969.

Dietary treatment of phenylketonuric (PKU) children is not uniformly successful, although a beneficial effect on developmental and intelligence quotients appears to occur when treatment is begun at an early age. Ss were 2 groups of 62 PKU children (32 male, 30 female; referral ages, 9 days to 10 yrs; ages at diagnosis, a few days to 170 mos). The treated group was divided into 3 sub-groups which were given low phenylalanine diets: those begun at the age of 3 months or earlier (15); those begun between 4 and 24 months of age (11); and those begun after 24 months of age (12). Part of the untreated group (the remaining 24 Ss) were on the low phenylalanine diets for less than 2 months. The period of dietary control for the treated group ranged from 7 months to 10 years. Evaluation of IQ or developmental quotient by various tests (Bayley Scales of Mental and Motor Development, Stanford-Binet Scale, Merrill-Palmer Scale, Wechsler Intelligence Scale, Cattell Infant Intelligence Scale) and growth and EEG measurements showed that children treated early in life exhibited slower growth than those treated later and that the frequency of abnormal EEGs does not appear to be modified by the diet. PKU children treated early in life appeared to have a higher IQ than those treated later. Measurement of serum phenylalanine levels did not aid in the classification of good or poor developmental achievement in that they were not good indices of future mental performance, of relative adequacy of the phenylalanine requirement, or of the success of dietary control. (38 refs.) - *M. S. Fish.*

Mayo Memorial Hospital
University of Minnesota
Minneapolis, Minnesota 55455

1017 FRENCH, JOSEPH H.; BROTZ, MIRIAM; & POSER, CHARLES M. Lipid

composition of the brain in infantile Gaucher's disease. *Neurology*, 19(1):81-86, 1969.

No increase in glucocerebroside was found during cerebral analysis of the brain of an autopsy case of infantile Gaucher's disease (IGD). An observed decrease of cerebrosides in the white matter may be related to deficiency of myelin. Comparison of analytical results (insoluble residue, upper phase solids, proteolipid protein, total lipid, and individual lipids) obtained from the brain of a 17-month-old IGD patient with that of a 16-month-old normal control (both formalin-fixed) showed that significantly lower levels of galactolipids (cerebrosides and sulfatides) were present in the gray matter of the IGD patient; however, these values were also lower in fresh-frozen control brains than in the formalin-fixed control. In the white matter, total galactolipid (both cerebrosides and sulfatides) in the IGD brain was lower than that in the control specimens. Characterization of the cerebrosides by thin-layer chromatography of both gray and white matter indicated that the IGD brain did not have a significant amount of glucocerebroside, possibly a chemical manifestation of deficient myelin. The disordered lipid metabolism of non-neural tissues associated with IGD may relate to improper central nervous system maturation. (36 refs.) - *M. S. Fish.*

Montefiore Hospital and Medical Center
111 East 210th Street
Bronx, New York 10467

1018 SILBERBERG, D. H. Maple syrup urine disease metabolites studied in cerebellum cultures. *Journal of Neurochemistry*, 16(7):1141-1146, 1969.

At a concentration comparable to that found in maple syrup urine disease (MSUD) α-ketoisocaproic acid, a metabolite found in this disorder, decreases, prevents, or delays myelination of myelinating cultures of rat cerebellum. These explanted cultures which normally myelinate, were exposed to metabolites of MSUD consisting of primary branched-chain amino acids (L-leucine, L-isoleucine, L-valine, DL-alloisoleucine) and α-keto acids (α-ketoisocaproic acid, α-keto-β-methylvaleric acid, and α-ketoisovaleric acid) by incorporation at physiological levels into otherwise normal feeding medium and adjustment of pH when necessary. Microscopic monitoring of selected cultures over a 4-week period disclosed that of the group of chemicals, only α-ketoisocaproic acid at concentrations of 1.0 - 2.0 mM produced changes (delay in formation and decrease in the numbers of normal myelinated axons). Higher concentrations of the material caused granular degeneration of neuroglia and of other cells, possibly small neurons. The results suggest that α-ketoisocaproic acid may be responsible for at least part of the damage which occurs in MSUD. (20 refs.) - *M. S. Fish.*

University of Pennsylvania School of Medicine
Philadelphia, Pennsylvania 19104

1019 READE, TERRY; & CLOW, CAROLINE. Home care of children with inborn errors of metabolism. *Canadian Nurse*, 66(10):41-43, 1970.

Close liaison with families having 1 or more children with inborn errors of metabolism has proved to be successful in the management of a number of these disorders. A home care program has been utilized for a variety of these diseases after screening of the newborn had detected their presence. Of 64 such patients, 25 had phenylketonuria, 8 had X-linked hypophosphatemic rickets; 6 had cystinosis; vitamin D dependency and hyperphenylalaninemia occurred in 5 each; 3 had cystinuria; 2, each, had homocystinuria, cystathionuria, and Fanconi syndrome; 1 had hereditary tyrosinemia; and 5 had miscellaneous disorders. Of the patients visited at home, the number of visits per patient was greatest for the X-linked rickets patients and least for those with cystinosis and homocystinuria. These visits proved useful in aiding the solution of family problems and in insuring that treatment routines were carried out. Telephone contacts with the families of patients were (in decreasing order of frequency) for health matters, laboratory results, non-diet and diet treatment, miscellaneous, supplies, appointments, and finances. This type of support has proved helpful for both the patient and the family. (2 refs.) - *M. S. Fish.*

Montreal Children's Hospital
Montreal, Canada

1020 SAIFER, ABRAHAM; SCHNECK, LARRY; PERLE, GUTA; & VOLK, BRUNO W. Lactate dehydrogenase isoenzyme distribution in the cerebral sphingolipidoses and other neurological disorders. *Neurology*, 19(2):147-156, 1969.

In the differentiation of patients with primary ganglioside disorders (those involving brain ganglioside storage) such as Tay-Sachs disease (TSD) and systemic late infantile amaurotic idiocy from those involving storage of sphingomyelin, sulfatides, and mucopolysaccharides, serum patterns of isoenzymes of lactate dehydrogenase (LDH), particularly the ratios of LDH-3:LDH-5 isoenzymes, are useful indicators. Utilizing agar-gel electrophoresis on serum samples and acrylamide gel disc electrophoresis on a number of cerebral spinal fluid samples of 33 control Ss (25 adults and 8 children) and on Ss with storage diseases of the central nervous system (10 children with TSD, 2 with systemic late infantile amaurotic idiocy, 3 with juvenile amaurotic idiocy, 1 with infantile metachromatic leukodystrophy, 2 with Niemann-Pick disease, and 1 with mucopolysaccharidosis, Type III), LDH isoenzyme distribution and LDH-3:LDH-5 ratio values were determined. Results indicated that the lowest ratio for TSD was about twice the level of the highest normal value; values for Ss with systemic late infantile amaurotic idiocy were also high. The 2 cases of sphingomyelin storage disorder (Niemann-Pick disease) showed negative values for this ratio. The other groups had values below normal. Examination of isoenzyme distribution in other degenerative neurological disorders such as brain damage, cerebral palsy, epilepsy, muscular dystrophy, and Parkinson's disease showed that most patterns and ratio values were closely related to normal ones. (31 refs.) - *M. S. Fish.*

Isaac Albert Research Institute of the
Kingsbrook Jewish Medical Center
86 East 49th Street
Brooklyn, New York 11203

1021 Lactic acidosis. *British Medical Journal,* 4(5730):258, 1970. (Editorial)

Lactic acidosis may be defined as a raised blood-lactate level together with a reduced arterial pH. There are 2 groups of cases: in one, the lactic-acid accumulation seems due to accelerated anaerobic glycolysis; in the other, there is no obvious cause (the outcome is fatal), but there is usually a serious associated condition (such as uremia, alcoholism, liver or arteriosclerotic heart disease, leukemia, or diabetes mellitus). Although in idiopathic lactic acidosis there is no evidence of impaired tissue perfusion, certain organs could be underperfused, even with normal blood pressure. Treatment for this form is unsatisfactory, with mortality at 80-100%. Methylene blue has had some success in correcting the abnormal lactate-pyruvate ratio. Vasoconstrictor drugs impair tissue perfusion and should be avoided. Correction of acidosis alone does not prevent a fatal outcome. Further study is needed for a rational therapy. (23 refs.) - *B. Berman.*

1022 Maternal phenylketonuria. *British Medical Journal,* 4(5729):192, 1970. (Editorial)

Phenylketonuria (PKU) screening should be a part of every antenatal examination. Untreated maternal PKU has been associated with MR offspring, intrauterine and postnatal growth retardation, physical anomalies, and miscarriage. Although the fetal effects of maternal PKU are not fully known, normal intelligent offspring do occur; possibly, a cut-off level of serum phenylalanine or fetal resistance are determining factors, but nevertheless, pregnancy in the known PKU should be planned and dietary treatment should be started before pregnancy. Since fetal damage may occur in pregnant women of normal IQ with unsuspected PKU, female siblings of all PKU patients should be checked, as should all women who have had repeated miscarriages or a child who is retarded or afflicted with skeletal, cardiac, or ocular malformations. (14 refs.) - *B. Berman.*

1023 **ARTHUR, L. J. H.** Maternal phenylketonuria. *British Medical Journal,* 4(5732): 431, 1970. (Letter)

Phenylketonuric (PKU) screening in the antenatal clinic is highly desirable. However, rather than a blood test, ferric-chloride or Phenistix urine testings (which are quicker, cheaper, and more revealing) should be part of the routine urine examination. A positive urine test is better than a blood test in separating the PKU mothers whose babies are at-risk from those who are safe. Two cases have been reported in which the routine antenatal Phenistix detected undiagnosed PKU mothers. (5 refs.) - *B. Berman.*

Derbyshire Children's Hospital
Derby, England

1024 **SNYDERMAN, SELMA E.** Metabolism: In: Wortis, Joseph, ed. *Mental Retardation:*

An Annual Review. III. New York, New York, Grune and Stratton, 1971, Chapter 4, p. 51-59.

Numerous recent investigations have centered on the study of metabolism related to MR, including amino acid metabolism and, particularly, biochemistry related to storage diseases. The most intensive areas of recent study in phenylketonuria (PKU) have been on the effects of treatment, effect of maternal PKU on the fetus, and the nature of hyperphenylalaninemia. All reports indicate that treatment of PKU has a beneficial effect on intelligence. A study of phenylalanine levels in the normal population indicates that routine testing should continue since the claim that many PKU Ss have normal intelligence has not been substantiated. The need for diet therapy during pregnancy of PKU women is emphasized by the increasing amount of evidence that the fetus is at high risk in such pregnancies. Concern that some cases of PKU among infant females may be missed on routine screening has arisen as a result of a study which identified in a population twice as many males as females with the disorder. Studies have also covered other disorders related to amino acid metabolism: maple syrup urine disease, in which damage occurs very rapidly and may be permanent; a new case of nonketonic hyperglycemia; the importance of vitamin B_6 therapy in homocystinuria; 3 new cases of cystathioninemia; a number of new cases of hyperprolinemia, a disease in which the clinical picture remains uncertain; histidinemia, a disease with great variation in the clinical features; various disorders of the urea cycle, including cases of deficiency of arginase and of hyperammonemia and a double enzyme deficiency; and a case of disorder of peptide metabolism (carnasinuria). Advances in the understanding of storage diseases include progress in identifying the structure of the accumulated material and the identity of the inactive enzyme responsible for the disorder. Two new disorders involving abnormal storage of carbohydrates (mannosidosis and fucosidosis) have been recorded. A new approach in the therapy of Lesch-Nyhan syndrome, a disorder of purine metabolism, has been reported, and further studies of vitamin dependent syndromes have been carried out. These include studies of a defect in folic acid utilization and vitamin B_6 and B_{12} dependency syndromes related to other disorders. Investigations have also been reported on syndromes of acidosis, a disorder caused by a block at either of 2 sites of propionate metabolism or in the decarboxylation of pyruvate. Of particular interest have been the developments in prenatal diagnosis of metabolic disorders. Direct measurement of enzyme activity of cultured fetal cells obtained by amniocentesis has enabled physicians to make *in utero* diagnoses of a number of these disorders and promises to make diagnosis of other disorders possible. (66 refs.) - *M. S. Fish.*

1025 WILLIAMS, ROBERT H. Metabolism and mentation. *Journal of Clinical Endocrinology and Metabolism,* 31(5):461-479, 1970.

The etiologic relationships of biochemical and metabolic factors in thought processes and behavior are emphasized. Certain genetically controlled enzyme deficiencies may result in mental retardation; examples include some aminoacidurias and galactosemia. The Lesch-Nyhan syndrome, a genetic disorder of purine metabolism, can result in mental retardation and self-mutilative behavior. Endocrine activity also influences mentation. Depression has been associated with abnormalities in catecholamine or corticosteroid activities. Decreased cerebral norepinephrine and serotonin cause depression; increases occur in mania. The urinary excretion of cyclic adenosine monophosphate is usually high in mania and low in depression. The genetic transmission of schizophrenia, and its relation to neurochemical disorders, is suggested. Many psychotomimetic substances are methylated derivatives of dopamine, norepinephrine, and serotonin. Sleep is affected by serotonin, catecholamines, glucosteroids, and thyroid hormones. Neurotransmitters discussed include norepinephrine, dopamine, serotonin, histamine, and acetylcholine; most are biogenic amines that are synthesized in the brain. (99 refs.) - *E. Kravitz.*

University of Washington
Seattle, Washington 98105

1026 DYKEN, PAUL; & CULLEY, WILLIAM. Another population of phenylketonuria? Studies on atypical phenylketonurics. *Developmental Medicine and Child Neurology,* 11(6):718-729, 1969.

It is asserted that persons with phenylketonuria do not all fit into a homogeneous pathologic pattern; case histories of normally functioning

persons with phenylketonuria are presented. Of 110 virtually untreated phenylketonurics in Indiana, 10 had high intelligence. Four of these 10 were from 2 families; they were 5, 8, 12, and 83 years old and did not exhibit the usual mental or physical pathologies. Serum phenylalanine levels and primary excretion of phenylalanine metabolites were lower, and oral phenylalanine tolerance was higher, than for most phenylketonurics. Neither family with these "normal" phenylketonurics produced offspring with the classical findings. So-called "classical" and "normal" phenylketonuria may represent 2 entirely separate disease populations. (11 refs.) - *E. Kravitz.*

Indiana University School of Medicine
Indianapolis, Indiana

1027 **WIGGLESWORTH, J. S.** Malnutrition and brain development. *Developmental Medicine and Child Neurology*, 11(6):792-794, 1969.

A brief review is presented of the effects of malnutrition on brain development. In rats, malnutrition at birth causes a permanent shortage in the number of cells as a result of deficient cell division. Malnutrition after 21 days decreases the cell size because of a deficiency in protein synthesis, but it does not affect the number of cells. (Subsequent increase in cell size can be achieved.) Animals subjected to malnutrition both *in utero* and after birth suffer the most severe loss of cells. Similar observations have been made with human infants; e.g., in Chilean children who died of malnutrition, there were fewer brain cells and the DNA content was 40% of normal in some brains. In infants suffering from malnutrition, diminished head circumference was indicative of retarded brain development (decreased brain weight, protein, and DNA). Malnutrition also seems to be etiologically related to decreased cerebral function. (12 refs.) - *E. Kravitz.*

Hammersmith Hospital
London, W.12, England

1028 **GARDNER-MEDWIN, D.** Cerebral gigantism? *Developmental Medicine and Child Neurology*, 11(6):796-797, 1969.

Cerebral gigantism, a rare condition associated with mental retardation, has no known cause. It may not even be a valid syndrome. But investigatory efforts toward clarification of the etiologic factors may help to contribute toward comprehension of cerebral control of growth. Either adrenal or pituitary lesions seem improbable explanations for cerebral gigantism. The causative lesion appears to be located in the brain. The possible role of the hypothalamus in this condition is discussed. (11 refs.) - *E. Kravitz.*

Royal Victoria Infirmary
Newcastle-upon-Tyne, 1, England

1029 **NIKLASSON, E.** Familial early hypoparathyroidism associated with hypomagnesaemia. *Acta Paediatrica Scandinavica*, 59(6):715-719, 1970.

Idiopathic hypothyroidism is described in two very young sisters who exhibited low serum magnesium. Evidence is presented of a non-sex-linked genetic basis for this condition, possibly as a recessive characteristic. One child had an IQ of 75 and signs of emotional instability. During hypomagnesemia, serum levels were as low as 0.4-0.5 mEq/liter in both children; normal values resulted from treatment with 7% magnesium sulfate orally. The discussion includes a comparison with previously reported cases of a similar nature. (34 refs.) - *E. Kravitz.*

Central Hospital
Vaxjo, Sweden

1030 **CHRISTENSEN, MOGENS F.; NIELSEN, JOHN A.; & HENRIKSEN, OLE.** Treatment of cystinosis with a diet poor in cystine and methionine. *Acta Paediatrica Scandinavica*, 59(6):613-620, 1970.

One favorable and one unfavorable therapeutic response to a cystine-deficient and methionine-deficient diet are reported in two children (brother and sister) with cystinosis. Treatment featured lentils meal as a protein source; each 100 gm contained 15.5 gm of protein (82-145 mg of cystine and 136-146 mg of methionine). Cholinechloride, 500 mg/day, and metandienon (0.3-0.5 mg/day), in anabolic steroid, were also supplied. The brother responded fairly well to this diet at first, but a modification (using cow's milk) was needed after a period of unfavorable response; his condition remains good. The sister's condition

remains static. Dietary treatment continued for one year in both cases. (22 refs.) - *E. Kravitz.*

Central Hospital
Holstebro, Denmark

1031 **VITEK, B.; SRACKOVA, D.; TOMAN, M.; KRATKY, J.; & VOGNAREK, J.** Hyperlipidemia in type III glycogenosis. *Acta Paediatrica Scandinavica,* 59(6):701-705, 1970.

Diagnostic aspects of a boy with type III glycogenosis and related hyperlipidemia are featured in this case report. Liver cells contained considerable PAS-positive material; hepatocytes consisted of large, pale, vacuolated cells. Acetonuria and fasting hypoglycemia were often associated. A blood glucose response to epinephrine and intramuscular glucagon was demonstrated postprandially but not after fasting. Transaminases (SGOT and SGPT) and globulins were high. The glycogen level was 6.18 gm/100 gm of wet skeletal muscle and 3.164 μg/gm of hemoglobin (both values were elevated). In the blood, total lipids, lipoproteins, cholesterol, γ-globulins, and β-globulins were elevated. Erythrocyte glycogen had two maximum absorptions (at 410 mμ and 500 mμ) during iodine complex absorption; a single peak (at 460 mμ) was observed normally. (29 refs.) - *E. Kravitz.*

Hospital for Sick Children
Brno, Czechoslovakia

1032 **MOSCHOS, A.; NICOLOPOULOS, D.; KARERELOS, C.; DANELATOU-ATHANASSIADOU, C.; & PAPATHANASSIOU, D.** Idiopathic hypoparathyroidism in an infant. *Helvetica Paediatrica Acta,* 25(1):59-61, 1970.

In a 50-day-old infant, idiopathic hypoparathyroidism, very rare in infancy, was diagnosed on the basis of clinical and biochemical findings as well as on the course of the disease. Findings included a mild temporary hypomagnesemia, the very favorable course after a stormy onset, and the probability of familial incidence. Cytogenetic studies as well as peripheral leukocyte cultures, done by adding phyto-hemagglutinine, revealed no abnormal findings. (No refs.) - *K. Baer.*

Athens University
Athens, Greece

1033 **KOSOWER, NECHAMA S.; & KOSOWER, EDWARD M.** Molecular basis for selective advantage of glucose-6-phosphate-dehydrogenase-deficient individuals exposed to malaria. *Lancet,* 2(7687):1343-1344, 1970.

In G-6-PD (glucose-6-phosphate-dehydrogenase)-deficient red blood cells, GSSG (glutathione disulphide) interferes with protein synthesis within the malaria parasite inside the red cell. Since a decline in protein-synthesis rate increases the time the parasite needs to complete its consumption of the red-cell contents, a higher than normal GSSG content in G-6-PD-deficient cells decreases parasite proliferation. The lessened intensity of malarial infection in G-6-PD-deficient individuals gives them a selective genetic advantage (perhaps mainly female heterozygotes), especially applicable to falciparum malaria, which has only one exoerythrocyte cycle. Experimental support for the hypothesis comes from a demonstration — in rabbit reticulocytes — that protein synthesis is closely associated with GSH (intracellular glutathione) concentration and that initiation is more sensitive to GSH deprivation than is translation (this was done by using new oxidizing agents that change GSH to GSSG without greatly affecting other cellular functions). (11 refs.) - *B. Berman.*

Albert Einstein College of Medicine
Bronx, New York 10461

1034 **PROCTOR, PETER; & McGINNESS, JOHN E.** Levodopa side-effects and the Lesch-Nyhan syndrome. *Lancet,* 2(7687):1367, 1970. (Letter)

Levodopa, which has appreciable electron-donor properties, and induces dyskinesia, may induce a schizophrenia-like psychosis similar to the Lesch-Nyhan syndrome. Levodopa resembles the purines and the phenothiazines in an unusual electronic structure, which may account for their similar behavioral effects. The validity of this association might be tested by inducing dyskinesia in animals with melanin in the substantia nigra. (7 refs.) - *B. Berman.*

Texas Research Institute
Houston, Texas

1035 **NIELSEN, J.; YDE, H.; & JOHANSEN, K.** Growth hormone in XYY men. *Lancet,* 2(7687):1363, 1970. (Letter)

Measurements of serum-growth-hormone in 6 Ss with a 47,XYY karyotype, including a young patient with open epiphyseal lines, confirm the recent findings of Lundberg and Wahlstrom. A normal fasting serum-growth-hormone and growth-hormone pattern after a glucose load does not exclude the possibility that tall stature associated with the XYY syndrome may be due to growth-hormone hypersecretion before epiphyseal closure; however, the patient with open lines had a normal plasma-growth-hormone pattern. (1 ref.) - *B. Berman.*

Aarhus State Hospital
Risskov, Denmark

1036 DOBBING, JOHN. The kinetics of growth. *Lancet,* 2(7687):1358, 1970. (Letter)

An analysis of almost 200 brains, from 10 weeks' gestation to 6 years of postnatal life, shows that the human brain experiences a "growth spurt," extending from about 30 weeks of gestation to 18 months or 2 years of age. Even mild degrees of restriction during this period will result in permanent deficits in those structures concerned with rapid growth in that period. Thus, the "small-for-dates" baby (rapid intrauterine growth) may be more severely affected than the premature ("appropriate-for-dates") baby, since the latter's "growth spurt" may be better safeguarded. (3 refs.) - *B. Berman.*

University Department of Child Health
Manchester, England

1037 PORTER, A. M. W. Sudden and unexpected death in infancy. *Lancet,* 2(7687):1358, 1970. (Letter)

Sudden death in infancy presents the possibility of familial clustering, and may reflect a metabolic crisis resulting from a surfeit of protein. This latter hypothesis depends on 2 premises: the high incidence of symptomless and unidentified phenylketonuric heterozygotes in the population, and the fact that an infant fed reconstituted cow's milk gets a protein excess, which is aggravated by cereal supplements. (Adult heterozygotes for PKU show a metabolic disturbance qualitatively similar to that in the corresponding homozygote.) The infant's death might be due to hypoglycemia, since protein feeding and a high blood-amino acid level stimulate insulin secretion. Relatives of such infants should be screened for inborn metabolic error. (3 refs.) - *B. Berman.*

Camberley
Surrey, England

1038 WEWALKA, FRIEDRICH G. Syndrome of the sea-blue histiocyte. *Lancet,* 2(7685):1248, 1970. (Letter)

A 27-year-old man with typical Giemsa-stained blue histiocytes in the bone marrow and eye changes (a white ring surrounding the macula) appears to be the first reported case of sea-blue histiocyte syndrome. For 23 years, this patient has had about the same number of pigment-loaded bone-marrow cells; the spleen is enlarged to percussion, and the eye fundi still show the same abnormalities. This case does not permit an answer to the question of heredity. The pigment may be laid down more intensively during short periods of life; prognosis seems to depend on the age when this occurs. (7 refs.) - *B. Berman.*

First Medical University Clinic
Vienna, Austria

1039 RODGERS, DOROTHY. The special child and nutrition. *Parent Educator,* 3(9):5A-8A, 1970.

Forty different kinds of retardation have been attributed to malnutrition – deficiencies of enzymes, amino acids, vitamins, minerals, or a metabolic dysfunction. This knowledge and the dramatic results achieved with massive B_{12} injections in Ss classified as schizophrenic emphasize the role of diet in mental, as well as physical, well-being. Supplying the missing amino acids during the first 5 days of life in a S with Down's syndrome will minimize the characteristic muscular weakness in this pathology. For proper nutrition, the child needs 13 "leader" nutrients: carbohydrates, proteins, fats and oils, calcium, iron, iodine, vitamin A, thiamine (B_1), riboflavin (B_2), niacin, vitamin C, vitamin D, and water. These are available in dairy foods; meat, fish, poultry, eggs, and legumes; vegetables and fruits; and breads and cereals. Persuading the special child to consume these nutrients will take consummate patience, skill, and special techniques. Each child must be approached as an individual. Food manufacturers

will provide literature of great value in solving many problems. (No refs.) - *B. Berman.*

No address

1040 Phenylketonuria. *British Medical Journal*, 2(5709):553, 1970.

Now that estimation of phenylalanine in capillary blood has virtually superseded Phenistix testing of urine in screening for phenylketonuria (PKU), some attention should be given to the setting up of regional screening programs and to an evaluation of existing diagnostic procedures. The Department of Health and Social Security has recommended that testing be done using the Guthrie bacterial inhibition test between the sixth and fourteenth days of life, but great variation presently exists in the times and methods of testing with some centers using one-dimensional chromatography to also detect such disorders as tyrosinemia, homocystinuria, maple syrup urine disease, histidinemia, and hyperprolinemia. Since the taking of a blood sample is a more serious matter than the testing of urine, parents should be informed immediately of the purpose of the test, and should be given precise information as to the results, positive or negative, and the necessary treatment. (3 refs.) - *N. Mize.*

1041 **CLAYTON, BARBARA E.; & WOLFF, O. H.** Phenylketonuria. *British Medical Journal*, 2(5711):732-733, 1970. (Letter)

Centralization of treatment for phenylketonuria is advocated to help reduce the chances that an infant will be treated unnecessarily with a diet low in phenylalanine. In some children, the risk of severe brain damage and MR resulting from too great a restriction of phenylalanine intake is substantial. Each case should therefore be carefully diagnosed in one of a small number of specialized centers by a professional management team, which would include pediatric dietician, biochemist, pediatrician, psychologist, and psychiatrist. Followup testing and treatment advice can be handled by mail and telephone, obviating the need for many trips to the center. (2 refs.) - *N. Mize.*

Hospital for Sick Children
London W.C. 1, England

1042 Feeding difficulties. *British Medical Journal*, 2(5700):3-4, 1970.

Infant feeding difficulties (dysphagia) as a presenting complaint represent a commonly encountered diagnostic and prognostic problem in the family physician's practice. Illingworth's etiological classification divides dysphagia into 3 main groupings: gross congenital malformations, neuromuscular disorders, and acute infections. Most of the diagnostic difficulties are associated with the neuromuscular disorders, which are less clearly defined, sometimes less responsive to treatment, and often unpredictable in their outcome. Included in this category are delayed maturation, cerebral palsy, cranial nerve abnormalities, bulbar and suprabulbar palsy, Mobius's syndrome, and rumination. Prognosis in infantile dysphagia is complicated by 3 main factors: the frequency of associated MR, especially in the case of congenital abnormalities; improper maternal management of the infant's "sensitive" or critical feeding period at age 6-7 months; and frequent pseudoretardation, which may contribute to an incorrect diagnosis. Of 19 cases treated by Illingworth, the most notable feature in the neuromuscular group was the remarkable improvement exhibited at follow-up examination, despite the original low mean intelligence. (3 refs.) - *N. Mize.*

1043 **MILLER, SANFORD A.** Nutrition in the neonatal development of protein metabolism. *Federation Proceedings*, 29(4):1497-1502, 1970.

Animal experiments have demonstrated the irreversibility of growth retardation caused by nutritional deficiencies during the suckling period as compared with the reversibility of similar stress later in life. DNA changes from dietary restrictions during the period of hyperplastic growth have been shown. Thus, normal growth depends on adequate nutrients, especially protein, in the immediate neonatal period. Protein's central role is evidenced in the relationship between growth rates of different species and protein concentration in the milk of these species. Rat studies have shown weight gain during the first 5 days of life, and indicate that milk production in lactating females is dependent on protein intake. Decreases in protein intake produced significant changes in carcass-nitrogen retention. Studies of leucine-^{14}C uptake into tissue protein have shown 2 peaks in protein synthetic activity, one at 5 days, the other at 19 days. Studies of amino-acid uptake, DNA

and RNA concentration, and shifts in amino-acid pool size to determine regulation of protein synthesis and the role of diet in this process have shown a complex, specific sequence in which DNA synthesis is followed by RNA synthesis, resulting in protein synthesis. The role of substrate in this process is crucial, and here, where diet plays its most essential role, nutritional deficiencies cause irreversible tissue change. (16 refs.) - *B. Berman.*

Massachusetts Institute of Technology
Cambridge, Massachusetts

1044 **WINICK, MYRON.** Nutrition and nerve-cell growth. *Federation Proceedings*, 29(4):1510-1515, 1970.

Animal and human studies have shown that early malnutrition: retards brain-cell division, cell migration, and myelin synthesis; permanently affects any proliferating cell type; and alters the glucose metabolic pathway. Later malnutrition, although reducing the size of individual cells, does not change their number. Glucose is the primary substrate in brain metabolism, and its restriction immediately after birth reduces the protein-to-DNA ratio, with reduced DNA apparent at 8 days of age; the cerebral cortex is not affected until 14 days. When the capacity for DNA synthesis is still present, cell-division rate is influenced by the rate of net protein synthesis, which alters the total protein content of the cells and the content of specific proteins. Fetal rat brains in protein-restricted mothers also show differential regional sensitivities, and brains of children who died of severe malnutrition during the first year of life show fewer cells than normal. Malnutrition in rats during the first 3 weeks of life affects lipid synthesis; in rats born to protein-restricted mothers, the brains reveal reduction of glucose metabolization to CO_2. Nutrition, apparently, affects cellular growth differently, depending on whether cells are actively dividing or not. This principle holds for all nonregenerating organs so far examined. (22 refs.) - *B. Berman.*

Cornell University Medical College
New York, New York

1045 **SILVERSTEIN, M. N.** Syndrome of the sea-blue histiocyte. *Lancet*, 2(7672):572, 1970. (Letter)

It is urged that the term sea-blue should be retained to describe the histiocyte characteristic of a certain syndrome. A spectrum of disease seems to be involved, going from a benign pattern with or without thrombopenia to a fatal progressive syndrome with hepatic fibrosis. The sea-blue histiocytes are easily recognized; they were present in 4 patients with neurologic disease. (4 refs.) - *E. Kravitz.*

Mayo Clinic
Rochester, Minnesota 55901

1046 **HANLEY, W. B.** Sex ratio in phenylketonuria. *Lancet*, 2(7664):150-151, 1970. (Letter)

No sex difference was apparent in classic cases of phenylketonuria, but there was a 2:1 male predominance in atypical cases. There were too few atypical cases (8 male and 4 female) to consider this conclusion to be definitive, however. A total of 18 male and 19 female classic cases were diagnosed by Guthrie screening (usually 4-5 days post-delivery) in Toronto and Montreal. (1 ref.) - *E. Kravitz.*

The Hospital for Sick Children
Toronto 2, Canada

1047 **DAVIS, J. G.** Carrageenan and galactosaemia. *Lancet*, 2(7673):610, 1970. (Letter)

The possible danger of a synthetic gum, like carrageenan, releasing galactose is noted. Microbiologic or chemical release of this sugar, often present at a concentration of 30-40% in such gums, could cause serious problems for children with galactosemia. Fortunately, the tightly bound galactose ingredient seems resistant to ordinary biochemical or microbiologic action. But the potential danger should not be ignored. (1 ref.) - *E. Kravitz.*

London W.1.
England

1048 **MORGAN, LAURA L.; *SCHNEIDERMAN, NEIL; & NYHAN, WILLIAM L.** Theophylline: Induction of self-biting in rabbits. *Psychonomic Science*, 19(1):37-38, 1970.

To explore the relationships between purine metabolism and self-mutilating behavior, 4 groups of 10 New Zealand male albino rabbits each were given a quarter-normal diet and daily injections of saline or 46.0, 61.5, or 92.0 mg/kg of anhydrous theophylline (1,3-dimethylxanthine) for 25 days. The major findings were that (1) the greatest number of self-biters were in the 61.5 mg/kg group; (2) mortality was directly related to drug dosage; and (3) the onset of biting occurred earliest with the highest dosage. The progress of the self-biting behavior generally followed particular sequence which began with mutilation of the forepaws and proceeded proximally towards the foreleg socket and abdomen. The similarity between the rabbits' self-mutilating behavior and the self-destructive biting of lips and fingers characteristic of human children with the Lesch-Nyhan syndrome, a genetically transmitted disorder of purine metabolism, is also noted. (3 refs.) - *J. C. Moody.*

*University of Miami
Coral Gables, Florida 33124

1049 **HILL, G. N.; & MORRISSEY, A.** Phenylketonuria — Mass screening of newborns in South Australia. *Australia Children Limited,* 3(10):320-323, 1970.

By February 1969, over 95% of infants born in South Australia were receiving the "Guthrie test" for phenylketonuria. Infants with the condition are admitted to the hospital for daily measurement of phenylalanine levels, and regulation of diet. After discharge from the hospital, the mother collects blood samples and contacts the diet nurse weekly. The incidence rate in South Australia is approximately 1 in 4,300 births. It is important that blood samples not be collected during the first 3 days of life, otherwise false negatives may occur. Results show that the dietary intake of phenylalanine must be individually regulated as individuals vary widely in tolerance. A sudden rise in blood phenylalanine has been found to occur following vaccinations and during periods of infection and teething. (No refs.) - *M-E. Sayre.*

Adelaide Children's Hospital
Adelaide, South Australia

1050 **DAVEY, KEITH W.; & TITLEY, KEITH C.** Hand-Schuller-Christian disease: Two case reports. *Journal of Dentistry for Children,* 37(4):317-323, 1970.

Hand-Schuller-Christian disease (Histiocytosis X.S.C.), characterized by disseminated lesions in the skeleton and possibly in the viscera, is primarily a bone-destroying process resulting in the replacement of normal bone by granulomatous tissue in which the primary cell is the histiocyte, a foam cell filled with cholesterol. Its etiology is unknown. In the skull, the lesions affect the flat bones, usually involving the inner table but later progressing to the outer table. In the dental area, the bony support is progressively destroyed, so that eventually the teeth are left suspended in the lesion with no periodontal attachment. The disease shows a basic triad of symptoms (defects in membranous bones, exophthalmos, and diabetes insipidus), but these are not manifest in all cases. In the 2 cases presented here, Patient A was a 9-month-old girl when first seen. At 26 months, the histological report showed fibrous and fibroblastic tissue with diffusely scattered infiltration of lymphocytes, eosinophils, and a few histiocytes. Effects on the dental area have resulted in a series of tooth extractions. At the age of 3, the child was small for her age but showed no obvious mental or physical defects. Patient B was a 23-month-old boy, well nourished but in poor health and with loose teeth. Bone destruction involved the mandibular primary and first permanent molars, but skeletal and skull roentgenograms were negative. He has not yet shown the triad. Radiotherapy is being used to control lesions; prognosis for both cases is fair. (11 refs.) - *M-E. Sayre.*

Hospital for Sick Children
Toronto, Ontario, Canada

1051 **DONCKERWOLCKE, R. A.; VAN STEKELENBURG, G. J.; & *TIDDENS, H. A.** Therapy of bicarbonate-losing renal tubular acidosis. *Archives of Disease in Childhood,* 45(244):774-779, 1970.

Administration of hydrochlorothiazide achieved correction of acid-base balance in a 2-year-old girl with severe bicarbonate-losing renal tubular acidosis after successive treatment with bicarbonate, tris-hydroxymethyl-amino-methane (THAM), and diuretics had failed. The S, a female with stunted growth and MR due to bicarbonate-losing renal tubular acidosis, did not respond to daily doses of sodium bicarbonate up to 15 g nor to doses of up to 1.25 g/kg/day of THAM. Gastrointestinal symptoms and severe diarrhea, respectively, prompted discontinuance of these treatments. Daily doses (up to 30 mg) of the diuretic,

frusemide, had no clear effect; however, doses of hydrochlorothiazide (20 mg/day – later reduced to 10 mg/day) corrected serum pH and bicarbonate, although severe hypopotassaemia required the addition of potassium bicarbonate (up to 10 g/day) to the diet. (17 refs.) - *M. S. Fish.*

*Wilhelmina Kinderziekenhuis
University Children's Hospital
Utrecht, The Netherlands

1052 **DONCKERWOLCKE, R. A.; VAN STEKELENBURG, G. J.; & *TIDDENS, H. A.** A case of bicarbonate-losing renal tubular acidosis with defective carboanhydrase activity. *Archives of Disease in Childhood*, 45(244):769-773, 1970.

A defect in the mechanism of carboanhydrase-dependent hydration of carbon dioxide is a probable cause of bicarbonate-losing renal tubular acidosis in a female patient with dwarfism and MR. The S, a product of an uneventful pregnancy, had retarded growth at 20 months and at 127 weeks Griffith's IQ test showed a mental age of 84 weeks and a general IQ of 66. Results of studies of blood serum, gastric acid secretion, urinary output, renal function, and bicarbonate loading revealed that the dwarfism was associated with metabolic acidosis. Renal acid-base regulation was disturbed. Renal threshold for bicarbonate was lowered, and hydrogen ion excretion was defective. Since glomerular filtration was normal, the absence of a systemic disease indicated that the disturbance was due to a primary bicarbonate-wasting renal tubular acidosis. The fact that administration of acetazolamide was without effect and did not inhibit carboanhydrase indicates that defective carboanhydrase activity may have been causative. (26 refs.) - *M. S. Fish.*

*Wilhelmina Kinderziekenhuis
University Children's Hospital
Utrecht, The Netherlands

1053 **WINICK, MYRON.** Biological correlations (Symposium: Nutrition, Growth, and Mental Development). *American Journal of Diseases of Children*, 120(5):416-418, 1970.

While definitive conclusions are not possible, present evidence obtained from studies of undernourished children and animals indicates that reduced head circumference correlates significantly with reduced brain cell number and lipid content in children who die, and with reduced functional capacity in those who survive. Animal studies have shown that early malnutrition causes deficits in brain function. In a longterm study of 33 Chilean children who survived early malnourishment and 16 well-nourished control children, matched with the undernourished group for age and cultural and socioeconomic background, 70% of the malnourished children had head circumferences below the tenth percentile for normal Chilean children. Capacities to adapt to their environment were limited in 91% of the malnourished group; 51.4% were educable with special teaching systems; 34% were only trainable for simple physical tasks; 3% required custodial care. The functional defects appeared to be irreversible. Autopsy data from the brains of 14 malnourished children who died showed reduced wet weight, protein, DNA, and RNA content. Reduced content but normal concentration of phospholipids and cholesterol were also observed. When malnutrition had persisted beyond 6 months, cerebellar cell number and DNA content were reduced. These results suggest that the observed biochemical differences found in the malnourished children who died may persist in the survivors; however, presently available data do not permit the assignment of specific cause and effect relationships. (15 refs.) - *M. S. Fish.*

Cornell University Medical College
New York, New York 10021

1054 **BIRCH, HERBERT G.** Introductory remarks (Symposium: Nutrition, Growth, and Mental Development). *American Journal of Diseases of Children*, 120(5):395-397, 1970.

Recent investigations utilizing sibship control studies and animal model systems have been successful in controlling various environmental factors in order to determine the extent to which nutritional risk affects the development of behavior and of later behavioral competence. These studies also focus on the evaluation of neurointegrative competence by examining those features of neurologic maturation which relate to general cognitive abilities. Investigations of this type, which are not influenced by cultural experiences, have shown that nutritional risk *in utero* and at early ages is correlated with later defects in significant aspects of behavioral competence. They

are also providing a useful framework for the consideration of issues which have political, as well as pediatric, significance. (No refs.) - *M. S. Fish.*

Albert Einstein College of Medicine
Bronx, New York 10461

1055 **ELDJARN, LORENTZ; JELLUM, EGIL; STOKKE, ODDVAR; PANDE, HELENE; & WAALER, PER ERIK.** β-Hydroxyisovaleric aciduria and β-methylcrotonylglycinuria: A new inborn error of metabolism. *Lancet,* 2(7671):521-522, 1970. (Letter)

A genetically determined error of metabolism, related to leucine degradation but different from those conditions previously described, is the most likely explanation for the occurrence of a rapidly progressing disease in a 4½-month-old girl from a consanguineous marriage, who had feeding difficulties, retarded motor development, muscular hypotonia and atrophy, and unpleasant smelling urine. Gas-liquid chromatography and mass spectrographic analyses of urinary metabolites revealed the presence of daily excretion levels of 400 mg of β-hydroxyisovaleric acid and 100 mg of β-methylcrotonylglycine (β-MCG). Analytical methods could not detect either substance in the blood; however, significant amounts (between 15 and 40 mg/day) of β-MCG were detected in the urine of the father, mother, and 2 older brothers. Neither substance could be detected in a large series of control urines. Despite dietary treatment with low leucine intake and consequent rapid lowering of β-hydroxyisovaleric acid (but only slight reduction of β-MCG) in the urine, the condition of the child did not improve, and she died 3 months later. Both the clinical and metabolic patterns observed in the S indicate that the disorder differs from other known errors in leucine metabolism (maple syrup urine disease and isovaleric acidemia). (5 refs.) - *M. S. Fish.*

Rikshospitalet
University of Oslo
Oslo, Norway

1056 **LEVY, HARVEY L.; SHIH, VIVIAN E.; KAROLKEWICZ, VALERIE; & MacCREADY, ROBERT A.** Screening for phenylketonuria. *Lancet,* 2(7671):522-523, 1970. (Letter)

Results from a survey of a screening program for phenylketonuria (PKU) in the newborn do not substantiate recent suggestions that some PKU females may go unidentified by screening because of a slower rise in blood phenylalanine levels as compared to males. Analysis of a total of 571,384 first and 435,465 second blood filter paper specimens, obtained at 3-4 days and 4-6 weeks of age, respectively, from approximately 98% (for the first specimen) and about 60-70% (for the second) of all children born in Massachusetts over a 6-year period showed that, except for 3 infants with atypical PKU, all infants identified as having PKU were detected from the first specimen. As a consequence, the screening laboratory no longer requests the second specimen. Of all cases of PKU detected between 1962 and 1970, including the 3 with the atypical form, blood specimens from the 58 males were obtained at an average of 5.7 days and from the 40 females at an average of 4.2 days of age. In every instance, except for the 3 atypical cases, analysis of the first specimen was adequate to differentiate the PKU infant from the normal one. (2 refs.) - *M. S. Fish.*

State Laboratory Institute
Massachusetts Department of Public Health
Boston, Massachusetts 02103

1057 **SZEINBERG, A.; SHANI, M.; CRISPIN, M.; HIRSHORN, N.; COHEN, B. E.; & SHEBA, CH.** Inhibition of phenylalanine hydroxylation during treatment of carcinoid syndrome with p-chlorophenylalanine. *Israel Journal of Medical Sciences,* 6(4):475-478, 1970.

Treatment of a carcinoid patient with p-chlorophenylalanine (CPA) caused a mild elevation of blood phenylalanine levels, likely due to inhibition of the hydroxylation mechanism which forms tyrosine. The S was a 67-year-old female with a carcinoid tumor of the terminal ileum and caecum with extensive metastases in the liver and peritoneum. Treatment with CPA (1 to 8 g/day) caused 5-hydroxyindoleacetic acid excretion to drop to normal; however, psychological disturbances occurred with the higher dose levels. The CPA caused a slight rise in blood phenylalanine levels, and serum CPA levels were 5 to 7 mg/100 ml when 4 g of CPA/day was administered over a 2-week period. A semiquantitative paper chromatographic procedure involving visual estimation of spot densities was utilized for the determination of these 2 substances. Serum tyrosine levels, as

estimated by a spectrofluorometric method, did not rise appreciably when the dose range of CPA was raised from 2 to 4 g/day. Normal serum tyrosine levels resumed 4-6 weeks after cessation of CPA treatment. The results suggest that the inhibition due to CPA in this case was greater than that present in phenylketonuria heterozygotes. (10 refs.) - *M. S. Fish.*

Government Hospital
Tel-Hashomer and Tel Aviv
University Medical School
Tel Aviv, Israel

1058 **JOHNSON, RONALD; GARDNER, ROBERT; & KOZLOWSKI, RONALD.** Phenylketonuria – oral manifestations. *Journal of Dentistry for Children,* 37(6):73-76, 1970.

Phenylketonuric (PKU) Ss on a high dextrimaltose carbohydrate diet (Lofenalac) had a lower incidence of carious lesions than did their siblings on a routine diet. The study group was 29 PKU children and 22 of their unaffected siblings, ages 1.5 to 8.5 years, who were given roentgenographic surveys and independent oral examinations by 2 dentists who collected data on soft tissue findings, oral hygiene, calcification of teeth, and distribution of dental caries. Interviews with parents provided information on when bottle-feeding was discontinued, on fluoride intake, and on toothbrushing and other oral habits. Results indicated a significant reduction in the number of decayed, extracted, or filled teeth among PKU Ss receiving fluoride compared to PKU Ss who did not. This effect of fluoride was not observed among the non-PKU siblings. Examination revealed no significant effect of oral habits or any differences in tooth calcification and soft tissue abnormalities. These findings suggest the need for further study to determine why PKU children on prolonged bottle feeding and with decreased masticatory function have a lower incidence of caries, when other studies have indicated that these conditions both contribute to the production of caries. (6 refs.) - *M. S. Fish.*

University of Iowa
Iowa City, Iowa

MEDICAL ASPECTS – Etiologic Groupings
New Growths

1059 **WALLIS, K.; DEUTSCH, V.; & AZIZI, EYOB.** Hypertension in a case of von Recklinghausen's neurofibromatosis. *Helvetica Paediatrica Acta,* 25(2):147-153, 1970.

An 11-year-old boy of Jewish Yemenite origin with von Recklinghausen's disease illustrates a rare instance of the disease in which hypertension occurs without a pheochromocytoma. Surgery revealed a stenosis at the origin of the left renal artery. Removal of the stenotic portion and arterial reimplantation reduced the blood pressure to normal limits. A fibromuscular hyperplasia was noted on histological examination of the excised portion. Only 11 cases have been reported of hypertension produced by vascular lesions in this disease. Return to normal blood pressure following stenotic repair explains the relation of hypertension to renal-artery stenosis. (8 refs.) - *B. Berman.*

University of Tel-Aviv Medical School
Tel-Aviv, Israel

1060 **KILLEFFER, FRED A.; & STERN, W. EUGENE.** Chronic effects of hypothalamic injury: Report of a case of near total hypothalamic destruction resulting from removal of a craniopharyngioma. *Archives of Neurology,* 22(5):419-429, 1970.

Autopsy findings in a child (in whom removal of a suprasellar craniopharyngioma caused no damage to the pituitary but almost total destruction of the hypothalamus with the more caudal portion partially preserved) permitted confirmation of findings in animals with similar lesions. The 5-year-old white girl (in excellent health until 6 weeks before hospitalization when she developed headaches,

listlessness, and vomiting) survived 6 years. She had abnormal EEGs and episodes of respiratory infection and thrombophlebitis. Frequently attending school, she performed at a poor but acceptable level (IQ 72), but behavioral outbursts required her removal. Clinically, she manifested deficient body-fluid regulation and endocrine activity (hypothyroidism and hypoadrenalism), hyperphagia causing obesity (this appears in cases of tumors at the base of the brain), abnormal sleep patterns, variations in body temperature, and diabetes mellitus. Occasional violent eruptions of rage were in consonance with the known association of the hypothalamus with outward expressions of rage and anger. (30 refs.) - *B. Berman.*

UCLA Center for Health Sciences
Los Angeles, California 90024

1061 **VOUTE, P. A., JR.; WADMAN, S. K.; & VAN PUTTEN, W. J.** Congenital neuroblastoma: Symptoms in the mother during pregnancy. *Clinical Pediatrics*, 9(4):206-207, 1970.

Six cases are reported of babies born with neuroblastoma, an embryonal malignant tumor of the sympathetic nervous system, to mothers who, during the last weeks of their pregnancies, complained of attacks of sweating, tingling of or decreased sensibility in hands and/or feet, paleness, headache, and certain cardiovascular symptoms. Where neuroblastoma develops before birth, metabolites of the catecholamines are produced and excreted in increased amounts by fetuses and hence by their mothers. Therefore, it is concluded that urine and blood from pregnant mothers having such complaints should be analyzed for these metabolites, so that treatment of affected babies may be begun immediately. (11 refs.) - *M-E. Sayre.*

Emmakinderziekenhuis
Amsterdam, The Netherlands

1062 **ARONSON, STANLEY M.; ARONSON, BETTY E.; BERKOVICH, SUMNER; COOK, ALBERT W.; & PORESS, NANCY E.** Clinical neuropathological conference. *Diseases of the Nervous System*, 31(5):348-354, 1970.

A case is reported of a 6½-year-old white boy hospitalized with complaints of progressive unsteadiness of gait, dizziness, headache, and double vision dating from a few weeks prior to admission. Earlier hospitalization for joint-swelling, hematuria, and facial edema had led to diagnosis of "thrombocytopenia purpura." Rehospitalization occurred about 15 months later for unsteadiness of gait, dizziness, double vision, parotid swelling, rising titers to mumps antigen and lumbar puncture findings suggestive of mumps encephalitis. There were no convulsions. The patient's condition continued to deteriorate despite surgery, and he died on the 21st hospital day, 13 days after surgery. A soft, white, poorly defined tumor mass in the posterior pons and medulla was noted during cranial autopsy; acute tissue necrosis was observed in the anterior pons, rostral cerebellum and vermis. Final diagnosis was malignant pontine astrocytoma, Grade IV, with extensions. The boy may have harbored the tumor prior to the attack of mumps, the latter exacerbating the symptoms and causing the child's parents to seek medical care. (2 refs.) - *M-E. Sayre.*

Miriam Hospital
Providence, Rhode Island 02906

MEDICAL ASPECTS – Etiologic Groupings

Prenatal influence

1063 **LILIEN, ARNOLD A.** Term intrapartum fetal death. *American Journal of Obstetrics and Gynecology*, 107(4):595-603, 1970.

In 43 of 83 intrapartum fetal deaths, the most common causes were prolapsed cord, abruptio placentae, hydrocephalus, and uterine rupture. Significant possibilities in the remaining 40 deaths, determined after selecting a control group to evaluate selected obstetric conditions, included breech presentation, tight nuchal cord, premature membrane rupture, and a previous stillbirth.

Identification of a term intrapartum fetal death was made from documentation of heart sounds after labor onset, birth weight of 2,501 grams or more, and no sign of life after complete delivery. The factors associated with the 40 deaths are useful in identifying the term fetus at risk during labor, although they are not necessarily critical events. (18 refs.) - *B. Berman.*

National Institute of Neurological
Diseases and Stroke
Bethesda, Maryland 20014

1064 **ERICSSON, N. O.; HELLSTROM, B.; NERGARDH, A.; & RUDHE, U.** Factors promoting urinary and anal continence in children with myelomeningocele. *Acta Paediatrica Scandinavica,* 59(5):491-496, 1970.

Twenty-four boys and 26 girls with myelomeningocele, studied to ascertain conditions for acquiring partial urinary and fecal continence, revealed that for urinary continence, 2 were completely continent, 13 had continuous dribbling incontinence, and 23 had dry periods of at least 1 hour. For fecal continence, 9 were continent, 22 were pseudocontinent, and 18 were incontinent. The 2 Ss with urinary continence belonged to the upper sacral group neurologically, but had unilateral functional loss. In defecation control, no definite relation between level of neurological lesion and degree of continence could be demonstrated. Normal sphincter tone had a favorable prognosis. In selecting patients suitable for training for socially acceptable continence, an active detrusor is more significant than sphincter function and bladder sensation in urinary continence; the ampulla is most significant for fecal continence. (7 refs.) - *B. Berman.*

Karolinska Sjukhuset
Stockholm, Sweden

1065 **ERICSSON, N. O.; HELLSTROM, B.; NERGARDH, A.; & RUDHE, U.** Unilateral neurological defect in myelomeningocele with normal bladder function: Report on two cases. *Acta Paediatrica Scandinavica,* 59(5):487-490, 1970.

A boy and a girl had a lumbosacral myelomeningocele and a unilateral neurological deficit but normal bladder control. The boy showed some psychomotor difficulties, but at age 8 years had complete control of urination and defecation; the girl, who had severe lumbar vertebral defects and required resection of a urethral polyp, was completely continent at 6 years. These cases confirm the view that, in this pathology, when neurologic disturbance is unilateral, function within the second to fourth sacral segment may be adequate to permit normal sphincter activity. (5 refs.) - *B. Berman.*

Karolinska Sjukhuset
Stockholm, Sweden

1066 **EECKELS, R.; van der SCHUERREN-LODEWEYCKX, M.; & WOLTER, R.** Plasma growth hormone determination in the Silver-Russell syndrome. *Helvetica Paediatrica Acta,* 25(4):363-370, 1970.

Three children with the Silver-Russell syndrome as defined by intrauterine growth retardation, short stature, bodily asymmetry, and incurved fifth fingers were tested for growth hormone (GH) response and glucose levels after insulin-induced hypoglycemia. One child had normal fasting GH and normal increase after stimulation, the second had an elevated fasting level and supranormal increase, and the third (MR) showed a low fasting GH without response. All showed prolonged hypoglycemia after stimulation. There was distinct heterogeneity in this aspect of the syndrome. (21 refs.) - *E. L. Rowan.*

University of Leuven
Leuven, Belgium

1067 **CHADD, M. A.; GRAY, O. P.; & KEYSER, J. W.** Gamma globulin levels in newborn with spina bifida cystica. *Acta Paediatrica Scandinavica,* 59(2):134-136, 1970.

A group of 36 infants born with spina bifida cystica was matched with 48 normal controls and the concentrations of serum immunoglobulin M (IgM) in cord blood were compared. An increase in this γ-globulin would indicate intrauterine infection. With the exception of one markedly elevated value in each group, all concentrations fell within the normal range. Maternal infection did not influence infant IgM. Intrauterine infection apparently does not play a role in the etiology of spina bifida cystica. (22 refs.) - *E. L. Rowan.*

Cardiff Maternity Hospital
Cardiff, CFI 2XF, United Kingdom

1068 **HOYERAAL, HANS M.; LAMVIK, JON; & MOE, PETER JOHAN.** Congenital hypoplastic thrombocytopenia and cerebral malformations in two brothers. *Acta Paediatrica Scandinavica,* 59(2):185-191, 1970.

Two brothers displayed a similar syndrome of small-for-dates birth, a bruising tendency, microcephaly, retarded growth, MR, and spasticity. Laboratory studies showed chronic thrombocytopenia and a hemolytic tendency. Autopsies revealed hypoplasia of both cerebrum and cerebellum. The syndrome shows some similarity to Fanconi's anemia and, like this, probably has a genetic mode of inheritance. Gene marker studies in the family failed to disclose any abnormality, however. (21 refs.) - *E. L. Rowan.*

University of Bergen
Bergen, Norway

1069 **VESTERMARK, S.** Silver's syndrome. *Acta Paediatrica Scandinavica,* 59(4):435-439, 1970.

Symptoms presented in 2 typical cases (1 boy, 1 girl) of Silver's syndrome included asymmetry, shortness of stature, and low birth weight at term. Estrogenization of the vaginal mucosa was present in the girl at age 15 months. Although MR can be a feature of Silver's syndrome, mental development in both cases appeared normal. Chromosomal abnormalities were not identified for either case. (17 refs.) - *J. K. Wyatt.*

Amtssygehuset
Glostrup, Denmark

1070 **VAPAAVUORI, EERO K.; & RAIHA, NIELS C. R.** Intensive care of small premature infants: I. Clinical findings and results of treatment. *Acta Paediatrica Scandinavica,* 59(4):353-362, 1970.

Overall survival rate among 49 premature infants (birth weights 850 to 1250 g) who received intensive care was 45%. In the 12 cases of severe respiratory distress, there was 1 survivor. Survival rates for cases of moderate and slight or no respiratory distress were 14 of 21 and 9 of 16, respectively. Mortality rate was much higher for infants with gestational ages between 24 and 28 weeks than for "small for date" infants (29 to 34 weeks of gestation). The incidence of infants with severe idiopathic respiratory distress syndrome who required intermittent positive-pressure respiration was strikingly higher in premature infants with gestational ages below 29 weeks. Severity of respiratory distress syndrome was related to delivery complications. Infants who died after severe respiratory distress had a strikingly lower mean pH, P_{O2} and a higher R-L shunt percentage. Follow-up studies indicated that only a few surviving infants suffered from permanent severe brain injury. (26 refs.) - *J. K. Wyatt.*

University Central Hospital
Helsinki, Finland

1071 **De LELLIS, MANLIO; & ANTONUCCI, FAUSTO.** Malformazione dell'arteria basilare (megadolicobasilare), angioma facciale, oligofrenia: Descrizione di un case (Malformation of the basilar artery—megadolicobasilar—facial angioma, oligophrenia: Description of a case). *Neuropsichiatria Infantile,* 109(March):305-311, 1970.

A 3-year, 10-month-old MR boy had an alteration of the basilar artery (megadolichobasilar) associated with a facial angioma. The S's 4 older brothers died between the ages of 9 months and 16 years and were psychomotorically retarded, although the parents were healthy and the pregnancies normal. Excluded, on the basis of observations, are a hydrocephalic encephalopathy, the coincidence of 2 alterations on the same pathogenic basis, and the coincidence of 2 independent alterations. The MR is probably the expression of a malformation process of the brain concomitant with basal malformations; therefore, the syndrome may be classified as MR due to congenital malformation according to Benda's conception. (4 refs.) - *G. Van Massenhove.*

Universita di Roma
Rome, Italy

1072 **De LELLIS, MANLIO; & SACCU, CARMINE.** Sindrome di Willy-Prader:

Descrizione di un caso (The Prader-Willi syndrome: Description of a case). *Neuropsichiatria Infantile*, 113(July-August):547-553, 1970.

A 6-year-old male (IQ<30), born by cesarean section, has exhibited the symptoms typical of the Prader-Willi syndrome. In his first year, he had 2 convulsions, suffered psychomotor retardation, obesity, and insufficient growth. A diencephalic alteration is apparent. The syndrome is probably the outcome of a malformative process with neural involvements. In view of the constant presence of MR, the syndrome should be classified as MR due to congenital malformation. (17 refs.) - *G. Van Massenhove.*

Universita di Roma
Rome, Italy

1073 **JAMES, A. EVERETTE; DeLAND, FRANK H.; HODGES, FRED J.; & WAGNER, HENRY N., JR.** Normal-pressure hydrocephalus. *Journal of the American Medical Association*, 213(10):1615-1622, 1970.

Radioisotope cisternography gives the best physiologic assessment of cerebrospinal fluid (CSF) dynamics and diagnostic technique in normal-pressure hydrocephalus (NPH). Nevertheless, it is not yet known whether NPH (characterized by neural dementia signs, awkwardness, ventricular increase without cortical atrophy, failure of air to pass over cerebral convexities, and normal CSF pressure) is merely a form of communicating hydrocephalus in which normal pressure is permitted by the enlarged ventricles. Cisternography (using improved imaging devices and radioactive pharmaceuticals) in 8 NPH Ss revealed abnormal movement of the pharmaceuticals into the ventricular system, with retention of radioactivity in the enlarged lateral ventricles. In 6 of these patients, there was irregular activity over the cerebral convexity but no radioactivity concentration in the sagittal area. In evaluating patients with CSF-flow problems, cisternography and evaluations of clinical signs, lumbar-puncture findings, and pneumoencephalography are required procedures. (17 refs.) - *B. Berman.*

615 North Wolfe Street
Baltimore, Maryland 21205

1074 **CULP, DAVID A.; BEKHRAD, ABBAS; & FLOCKS, RUBIN H.** Urological management of the meningomyelocele patient. *Journal of the American Medical Association*, 213(5):753-758, 1970.

Evaluation and treatment of 108 spina-bifida children with meningomyelocele (17 had bladder control, 49 had flaccid incontinence, 42 had spastic incontinence) showed that conservative therapy is applicable only when the S can satisfactorily empty the bladder by detrusor contractions or Crede maneuvers and there is no sign of upper-tract deterioration and that supravesical diversion of urine is necessary in persistent infection, vesicoureteral reflux, or diminished renal function. Ileal conduit diversion was the predominant surgical management method; nephrostomies and suprapubic cystostomy were used in a few cases. In 40 patients given conservative therapy, 29 had good results (no renal deterioration, vesicoureteral reflux, hydroureter, hydronephrosis, or infection), 6 had fair results, 2 had poor results (there was insufficient data on the rest). In 15 Ss receiving supravesical diversion by ileal conduit, 14 showed improvement (no deterioration of upper-urinary tract or morphological condition, and eradication of infection). (1 ref.) - *B. Berman.*

University of Iowa College of Medicine
Iowa City, Iowa 52240

1075 **MACE, JOHN W.; & GOTLIN, RONALD W.** Cerebral gigantism: Triad of findings helpful in diagnosis. *Clinical Pediatrics*, 9(11):662-667, 1970.

Four cases of cerebral gigantism display a characteristic triad of features: a period of accelerated growth followed by a normal growth rate, advanced bone age, and no evidence of isosexual precocity. MR is a variable finding. All 4 Ss showed normal levels of growth hormone including normal circadian variation. (22 refs.) - *E. L. Rowan.*

University of Colorado Medical Center
Denver, Colorado 80220

1076 **BIANCHINE, JOSETTE W.** Hypoplasia and contracture of the thumb in X-linked congenital hydrocephalus due to stenosis of aqueduct of Sylvius. *Clinical Pediatrics*, 9(7):13A, 1970. (Letter)

A characteristic abnormality in which the thumb is hypoplastic and contracted and lies in extreme flexion across the palm is noted in the X-linked hydrocephalus due to stenosis of the aqueduct of Sylvius. The syndrome also includes MR, spastic paraplegia, and ocular manifestations. The digital malformation may be the earliest clinical sign of the syndrome. (6 refs.) - *E. L. Rowan.*

No address

1077 LORENZO, ANTONIO V.; PAGE, LARRY K.; & WATTERS, GORDON V. Relationship between cerebrospinal fluid formation, absorption and pressure in human hydrocephalus. *Brain*, 93(4):679-692, 1970.

Cerebrospinal fluid (CSF) perfusion with ^{125}I human serum albumin was used to study CSF formation, absorption, and pressure in 10 children and 2 adults with normal CSF pathways and hydrocephalus. The mean rate of CSF formation was lower but not significantly different from normal. Two types of absorption defects were noted: one in which absorption did not begin until pressure considerably higher than normal was attained and another in which absorption began at normal pressure but at a slower rate. In 8 of the patients, the CSF volume exceeded the normal range. In both ventricular and lumbar spaces, the amplitude of pressure fluctuations rose as the mean CSF pressure rose. (39 refs.) - *E. L. Rowan.*

Harvard Medical School
Boston, Massachusetts 02115

1078 JAMES, E.; & VAN LEEUWEN, G. Familial cebocephaly. *Clinical Pediatrics*, 9(8):491-493, 1970.

A case of cebocephaly with normal karyotype had orbital hypotelorism, a single median nasal aperture which ended in a blind pouch, a small penis, and undescended testicles. The head was elongated, the frontal area flattened, and anterior and posterior fontanels were patent. He was admitted to the hospital at age 3 days and at age 12 days the palate was fenestrated to create an air passage from the nostril to the pharynx. Postoperative signs included intermittent respiratory distress, seizures, and low serum sodium levels. He expired at the age of 8 weeks after an apneic episode with cardiac arrest. Postmortem examination revealed severe cerebral malformation which included fused lateral ventricles and absence of the corpus callosum, septum pellucidum, and fornix. The patient had an older sibling with apparently the same condition. (13 refs.) - *J. K. Wyatt.*

University of Colorado Medical Center
4200 East 9th Avenue
Denver Colorado 80220

1079 SUCHESTON, MARTHA E.; & CANNON, M. SAMUEL. Microscopic comparison of the normal and anencephalic human adrenal gland with emphasis on the transient-zone. *Obstetrics and Gynecology*, 35(4):544-553, 1970.

Microscopic studies of normal and anencephalic adrenal glands have shown that while the latter are markedly smaller than are normal adrenal glands at birth, zonular development in glands of anencephalic fetuses of 16 weeks to term gestation was comparable to that of a 2- to 4-year-old normal adrenal gland. Examination of specimens from 14 anencephalic fetuses (16 wks gestation to term) and 28 normal glands (8.5 wks gestation to 4 yrs), which were fixed, embedded, and stained (hematoxylin, eosin, azan), exposed to alcian blue-periodic acid-Schiff (AB/PAS), and lipid reactions, revealed that at the fifth month adrenals from anencephalic fetuses had a significantly decreased amount of PAS-positive material within the transient zone, possibly representing impaired production and/or concentration of products from the Golgi apparatus. The transient zone disappeared quickly (20-24 wks after gestation) in these glands due to rapid maturation and differentiation, a process normally requiring up to 1 year postnatally. This early maturity of the anencephalic adrenal is likely associated with impaired function as indicated by earlier absence of PAS-positive granules and the fact that a cortical lipid reaction was absent in anencephalic glands which were examined between week 26 of gestation and birth. (35 refs.) - *M. S. Fish.*

Ohio State University College of Medicine
Columbus, Ohio 43210

1080 QUEENAN, JOHN T.; & GADOW, ENRIQUE C. Amniography for detection of congenital malformations. *Obstetrics and Gynecology*, 35(4):648-657, 1970.

Amniography can provide information on the type and extent of congenital malformations in cases of hydramnios (excess of amniotic fluid) after multiple gestation, erythroblastosis fetalis, and diabetes are ruled out. A recent review of 86,301 consecutive deliveries showed that hydramnios occurred in 358 cases (0.41%) of this group. Hydramnios was associated with diabetes, erythroblastosis fetalis, and multiple gestation in 88, 41, and 33 cases, respectively, and congenital malformations were present in 72 (or over one-third) of the remaining cases, with a perinatal mortality rate of 86% for this latter group. Amniography can detect soft-tissue or gastrointestinal abnormalities (such as anencephaly, microencephaly, meningoceles, or gastrointestinal tract obstruction) by means of the radiopaque medium which, when injected into the amniotic cavity, renders these areas visible on a roentgenogram. Correctable malformations can frequently be recognized in time to provide for proper management; whereas, the detection of non-correctable ones can afford the physician with adequate information to recommend termination of the pregnancy in the safest manner possible. (6 refs.) - *M. S. Fish.*

New York Hospital-Cornell Medical Center
New York, New York 10021

1081 BARTSOCAS, CHRISTOS S.; WEBER, ALFRED L.; & CRAWFORD, JOHN D. Acrocephalosyndactyly type III: Chotzen's syndrome. *Journal of Pediatrics,* 77(2):267-2272, 1970.

The pattern of transmission of acrocephalosyndactyly type III (Chotzen's syndrome) in a family where 6 males and 4 females from 3 separate generations were affected suggests autosomal dominant inheritance. Abnormalities and clinical features for this syndrome are mild-to-moderate MR, convulsions, strabismus, head deformities (flat occiput, prognathism, ptosis, hypertelorism, deviated nasal septum, ear deformities) and limb deformities (partial syndactyly of the second and third fingers and toes, radioulnar synostoses, simian palmar creases). No chromosomal abnormalities were detected in the affected Ss who were tested. The maternal grandfather of the male proband was affected. His wife, who was not examined, had 14 pregnancies, including 6 abortions. Of the live births, 4 males and 2 females, including the proband's mother, were affected; 3 other daughters were normal. The proband's mother had an affected daughter and 3 normal sons by a previous marriage and 2 affected children (the proband and a female sib) by the second; three other female sibs of the proband were normal. (9 refs.) - *M. S. Fish.*

"Aghia Sophia" Children's Hospital
Athens (608), Greece

1082 SMITH, DAVID W.; & AASE, JON M. Polygenic inheritance of certain common malformations: Evidence and empiric recurrence risk data. *Journal of Pediatrics,* 76(5):653-659, 1970.

A number of genetic factors appear to be associated with the etiology of single common malformations, and while precise knowledge of their influence is inexact, considerable information is available for the purpose of genetic counseling of parents who have had a child with one of the malformations. For example, the probability of recurrence of certain defects (cleft lip and/or palate, clubfoot, anencephaly, meningomyelocele, dislocation of the hip; pyloric stenosis) has been estimated for siblings and other relations of affected individuals. These estimates are influenced by such factors as whether or not a sib is a dizygotic or monozygotic twin. In the former case, concordance is comparable to a sib born of a separate pregnancy. The sex is important since the male/female proportion can vary from 5:1 for pyloric stenosis to 1:5.5 for congenital hip dislocation. In the former type of disorder, an affected mother is the more likely of the 2 parents to pass on the deformity. Racial differences have been detected for deformities such as clubfoot, and the more severe the malformation, the greater the tendency for a recurrence of the defect. Present evidence suggests that, compared with environmental effects, these polygenic factors play the predominant role in the occurrence of congenital malformations. (18 refs.) - *M. S. Fish.*

University of Washington Medical School
Seattle, Washington 98105

1083 3^{e} Conference internationale sur les malformations congenitales, La Haye, 7-13 Septembre 1969 (Third International Conference on Congenital Malformations, The Hague, September 7-13, 1969). *Revue d'Hygiene et de Medecine Sociale,* 18(5):555-558, 1970.

The proceedings of the congenital malformation conference show that the study of such malformations has entered a phase dominated by methodological investigations, as demonstrated by the important place held in the discussions of problems concerning the mechanism of development, molecular biology, and the relation of embryonic development to the uterine milieu and to exogenous factors. The treatment of malformations as such included the design of complex mathematical models and the basic problems of the correlations of karyotype and genotype but concentrated on statistical and etiological studies. Methods of prevention of malformations and treatment at different stages—before and after conception and after birth—were discussed. (No refs.) - *K. Baer.*

1084 FONTAINE, J. -L.; BOULESTEIX, J.; SARAUX, H.; LASFARGUES, G.; GRENET, P.; DUNG, N'GHIEM-MINH; DHERMY, P.; ROY, C.; & LAPLANE, R. Nephropathie tubulo-interstitielle de l'enfant avec degenerescence tapeto-retinienne: Syndrome de Senior (Infantile tubulo-interstitial nephropathy with tapeto-retinal degeneration: Senior's syndrome). *Archives Francaises de Pediatrie,* 27(5):459-470, 1970.

Senior's syndrome, of which only 12 cases have been reported, is characterized by neurological symptoms, growth retardation, blindness, renal insufficiency, and diffuse dermatitis. It was observed in a boy who died at the age of 7 years. The onset of the disease occurred between 18 and 24 months of age, but the correct diagnosis of nephropathy was made only 6 months before death. The clinical and histological oculo-renal aspects led us to the diagnosis of general nephropathy with tubulo-interstitial predominance associated with Leber's tapeto-retinal degeneration. Despite the absence of familial occurrence, this case may legitimately be compared with similar cases described by various authors, and particularly by Senior. From a nosological point of view, the case is a primary chronic infantile nephropathy, closely related to nephrophthisis. (13 refs.) - *K. Baer.*

Trousseau Hospital
Paris, France

1085 DODION, J. Contribution a l'etude de la mortalite perinatale (A contribution to the study of perinatal mortality). *Acta Paediatrica Belgica,* 24(3-4):431-441, 1970.

Perinatal mortality rate at St. Peter Hospital (Brussels) among 9,677 births over a period of 5 years is higher than in the Scandinavian countries and the Netherlands, but lower than in England. The most important causes of death are anoxia and hyaline membrane disease. The incidences of congenital malformations, obstetrical traumatisms, pulmonary infections, and hemolytic diseases were lower than those in England, however, the incidence of hyaline membrane disease was higher. Prematurity constitutes a main problem; actually, two-thirds of the dead children had a birth weight of less than 2,500g. Although the increase is statistically insignificant, a rather steady rise in the numbers of premature deliveries was observed. Despite intensive care, the early neonatal mortality rate of the premature babies was not lowered to a statistically significant extent. The organization of systematic international surveys is highly desirable. (12 refs.) - *Author abstract, edited.*

Free University of Brussels
Brussels, Belgium

1086 PURIN, V. R.; & ZHUKOVA, T. P. O diagnosticheskom znachenii izmenenii kontsentratsii belka v likvore pri gidrotsefalii u detei (On the diagnostic significance of changes in protein concentration in cerebrospinal fluid in hydrocephalus in children). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova,* 70(5):693-698, 1970.

An increase in general protein concentration in cerebrospinal fluid is characteristic for active hydrocephalus with an onset in early childhood. In 34 actively hydrocephalic children (CA 1 1/2 to 2 yrs) who manifested disorders of intrauterine development and consequences of intracranial trauma at birth, protein concentration in cerebrospinal fluid was characterized as sharply decreased in 19, normal in 8, and raised in 7. Attempts to correlate anamnestic data, possible etiology of the disease, peculiarities of the disease course, and level of intracranial pressure with protein concentration were unsuccessful. Three series of trials were conducted with young, occlusively hydrocephalic rats. Against a background of the progressive form of the disease, the protein content in cerebrospinal fluid generally exceeded the norm. In the terminal stages of dropsy, the fluid contained a large amount of leukocytes with significant predominance of segmented forms together

with fresh and damaged erythrocytes. The increase in protein concentration in cerebrospinal fluid in active hydrocephalus may be connected with the flow of products of atrophied nervous tissue into the fluid. Increased intracranial pressure in hydrocephalus leads to destruction of blood circulation in the brain and to accompanying manifestations of venous hyperemia. (9 refs.) - *B. J. Grylack.*

Pediatric Institute of the
Academy of Medical Sciences
Moscow, Union of the Soviet Socialist Republics

1087 **BATTAGLIA, FREDERICK C.** Intrauterine growth retardation. *American Journal of Obstetrics and Gynecology*, 106(7):1103-1114, 1970.

Diagnosis of intrauterine growth retardation should be made as early as possible so that proper management can be initiated promptly. Most problems associated with this condition appear at or shortly after delivery. These include congenital anomalies, central nervous system depression, meconium aspiration pneumonia, pulmonary hemorrhage, transient hypoglycemia, elevated blood hematocrits, and increased oxygen consumption. Forewarned, the obstetrician and pediatrician can take appropriate steps and often save the infant since the first 3 or 4 days of life comprise the most critical period. Cyanotic heart disease and various types of infection in the pregnant mother have been implicated in this condition; however, adequate data are not available to indicate clearly which complications, individually or in combination, directly result in intrauterine growth retardation. Diagnostic procedures include various methods for the estimation of fetal size and gestational age, the latter usually requiring several tests for accurate determination. A disproportion between these 2 measurements usually differentiates this condition from prematurity. Since estimates indicate that about one-third of all low-birth-weight infants are born at term but have intrauterine growth retardation, the magnitude of the problem is apparent. (43 refs.) - *M. S. Fish.*

University of Colorado Medical Center
Denver, Colorado 80220

1088 **SCOTT, DANIEL E.; WHALLEY, PEGGY J.; & PRITCHARD, JACK A.** Maternal folate deficiency and pregnancy wastage: II. Fetal malformation. *Obstetrics and Gynecology*, 36(1):26-28, 1970.

A study of the effects of maternal folate deficiency on fetal wastage does not confirm other findings that folate deficiency occurs more frequently in mothers of malformed fetuses than in women with clinically normal pregnancies. Three groups (a control population of normal women in uncomplicated late pregnancy, mothers of anomalous fetuses, and pregnant or parturient women with folate deficiency so great as to cause overt anemia) were studied in terms of plasma folate levels, extent of neutrophil hypersegmentation, and pattern of marrow erythropoiesis. Results showed that plasma folate levels of women with malformed fetuses were not significantly lower than those of the control group. Neutrophil mean lobe count and percentage of neutrophils with 5 or more lobes did not differ significantly for these 2 groups, and megaloblastic erythropoiesis was infrequent in both of them and mild or moderate when present. Anemic mothers who were responsive to folate had low plasma folate activities, increased neutrophil lobation, and overt megaloblastic anemia. The observation that the control group and the mothers of malformed fetuses did not differ significantly on these measures complements a previous finding that, of 88 mothers with overt megaloblastic anemia and having folate deficiency, none produced infants with serious malformations identified during the perinatal period. (7 refs.) - *M. S. Fish.*

University of Texas
(Southwestern) Medical School at Dallas
Dallas, Texas 75235

1089 **CARTER, C. O.** Spina bifida and anencephaly: A problem in genetic-environmental interaction. *Journal of Biosocial Science*, 1(1):71-83, 1969.

Although knowledge of the etiology of anencephaly and spina bifida cystica is still incomplete, data from family studies and from racial variation in the incidence indicate that genetic factors play a major role, and information regarding maternal age, birth order, social class, and secular and seasonal variations indicates that environmental effects may also be important. These malformations due to failure of closure of the neural tubes are a major cause of stillbirth and neonatal death and morbidity. In England and Wales, the incidence of spina bifida is about 2.4/1000 total births,

and the incidence of anencephaly is about 2/1000 total births. Both conditions are more common in Wales and Ireland than in other areas of Britain, and studies of world-wide distribution have shown similar geographic differences in incidence. Investigation of migrant populations has indicated the importance of genetic factors since migrants retain the high incidences of the areas from which they come. Sex ratio also indicates a genetic relation; male:female ratios for spina bifida and anencephaly are 0.8 and 0.4, respectively, in England and Wales. A combination of environmental factors, particularly social class effects (the latter likely nutritional), appears to be contributory. (34 refs.) - *M. S. Fish.*

Institute of Child Health
London, W.C.I, England

1090 AFIFI, A. K.; & ZELLWEGER, H. Pathology of muscular hypotonia in the Prader-Willi syndrome: Light and electron microscopic study. *Journal of the Neurological Sciences,* 9(1):49-52, 1969.

The first reported ultrastructural studies of muscle from cases of the Prader-Willi syndrome (HHHO) indicate that muscular immobility or disuse may account for the observed muscular hypotonia associated with this disease, which is also characterized by obesity, short growth, MR, and cryptorchidism. Muscle biopsies from 7 cases of HHHO, when examined by light and electron microscopy, revealed subsarcolemmal aggregates of mitochondria, Z-line abnormalities, and myofibrillar alterations (disarray or fragmentation). Newborns with HHHO have severe muscular hypotonia; they are motionless, with depressed reflexes, and the absence of sucking or swallowing responses requires feeding by tube. After a few weeks the infants become more responsive, but pronounced muscular hypotonia may persist. Development of psychomotor activity and speech is delayed, and polyphagia develops after the first year. Normal findings from electromyographic and enzyme studies, along with the noted ultrastructural changes, suggest that immobility and disuse of muscle may be a more likely cause of hypotonia than primary myopathy or neurogenic atrophy. (38 refs.) - *M S. Fish.*

American University of Beirut Hospital
Beirut, Lebanon

1091 EKBOM, K.; GREITZ, T.; & KUGELBERG, E. Hydrocephalus due to ectasia of the basilar artery. *Journal of the Neurological Sciences,* 8(3):465-478, 1969.

Ectasia of the basilar artery has been shown to cause a functional form of obstructive hydrocephalus resulting from deformation of the third ventricle. Clinical and neuroradiological examination of 9 cases (4 men and 5 women of average ages of 54 and 63 years, respectively) of hydrocephalus due to an elongated and ectatic basilar artery disclosed that clinical symptoms appear in 3 stages: latent stage with essential hypertension, present in every case; disturbances of gait and balance (present in 8 Ss – 6 with the apraxia of gait type and 2 of the spastic ataxia type); and presenile dementia (rapidly progressive in 8 Ss). Epilepsy was present in 4 Ss (3 with grand mal seizures, 1 with a motor Jacksonian seizure on the left side). Cerebral blood flow was reduced in the 7 cases which were examined. Encephalography disclosed the characteristic deformation of the third ventricle, and the distension of the basilar artery was confirmed by angiography. In 6 of the cases examined, RIHSA cisternography demonstrated disturbances in circulation of the cerebral spinal fluid. A shunt operation (Pudenz type) was performed in 6 cases; one was inoperable, and the other 2 refused the operation. Slight to distinct improvement was noted in 4 of the Ss after operation, and cerebral blood flow increased in 3 of these Ss; however, postoperative complications indicated that these patients are sensitive to the operation, and it must be performed with great caution. (27 refs.) - *M. S. Fish.*

Karolinska Sjukhuset
Stockholm, Sweden

1092 O'BRIEN, NIALL G.; & DUNDON, SHEAMUS P. Low birth weight. *British Medical Journal,* 4(5737):745, 1970. (Letter)

In Dublin's National Maternity Hospital, during 1966-1969, 65 infants (850-1,250 g in weight) were liveborn, of whom 32 (49%) survived. A 1-year follow-up showed permanent brain damage in 6 (18%). In the same interval, there were 19,844 live births, of whom 1,288 (6.5%) weighed 2,500 g or less at birth, with 134 (10.5%) neonatal deaths in the first week. (2 refs.) - *B. Berman.*

National Maternity Hospital
Dublin 2, Ireland

1093 Placental insufficiency. *British Medical Journal*, 4(5735):569-571, 1970. (Editorial)

The nutritional function of the placenta during pregnancy is a central concern, and any suspicion of placental insufficiency should be checked by special tests. Growth rate of the uterine fundus and estimates of fetal weight and size are the best clues. Diagnosis of the "small-for-dates" fetus is best checked by urinary excretion of estriol and/or pregnanediol. Two good tests—not yet widely used—are measurement of uptake of radioactive selenomethionine, which reflects fetal nutritional state, and direct measurement of fetal biparietal diameter by ultrasound. All tests must be interpreted against a known length of pregnancy (the clinical problems are almost insuperable if a woman is not sure of her dates). In clinical practice, retarded intrauterine growth must be judged by fundal height, estimated fetal weight, maternal weight and girth increase, and liquor amnii. (10 refs.) - *B. Berman.*

1094 Low birth weight and intensive care. *British Medical Journal*, 3(5724):657-659, 1970.

Perinatal medical care is focusing on low-birth-weight infants, and a chief factor in survival in such infants is the quality of nursing care they receive. Thus, recent changes in nursing techniques make it advisable to transfer infants to large hospitals where proper care and equipment are available. Respiratory deaths are the most common among very immature infants, and resuscitation is needed immediately to establish respiration just after birth and to cut down the cyanotic attacks, which may damage the brain. The nurse must be able to recognize apnea, and to take immediate ameliorative action for this, regurgitation and inhalation of feeds, and early signs of infection. For infants born before term ("light-for-dates"), expert nursing will help reduce mortality from the respiratory-distress syndrome (high mortality associated with intraventricular hemorrhage and exhaustion), malformations (many not readily recognizable at birth), and hypoglycemia (prevented through early feeding) which can cause permanent brain damage. Accurate methods for estimating fetal maturity and standardized nomenclature are needed as well as regional centers where newborns can get the intensive care needed for survival; a Helsinki study showed that such care increased survival from 25% to 45% in infants weighing 850 to 1250 g at birth. (6 refs.) - *B. Berman.*

1095 **OJEMANN, ROBERT G.** Normal pressure hydrocephalus. In: Tindall, George T., ed. *Clinical Neurosurgery. Volume 18.* Baltimore, Maryland, Williams and Wilkins, 1971, Chapter 16, p. 337-370.

Normal pressure hydrocephalus (also called occult hydrocephalus, low pressure hydrocephalus, normotensive hydrocephalus, and hydrocephalic dementia) is a well established syndrome characterized by a group of neurological signs associated with lumbar cerebrospinal fluid (CSF) pressures of less than 180 mm. Plain skull films are normal, and evidence of increased intracranial pressure is absent. The disorder may develop as a result of a specific pathological process (head trauma, hemorrhage), but sometimes the etiologic process is unknown. The symptoms, which usually develop slowly over a period of time, include mental change, disturbance of gait, and occasional fainting spells. As the disease progresses, speech is slowed and severe memory impairment may occur. Besides normal skull films, radiological findings by pneumoencephalography reveal marked enlargement of the ventricular system, and angiography may aid in differentiating the disorder. CSF absorption may be reduced in some cases, and isotope cisternography can sometimes indicate if a shunt operation should be performed. If the patient has Alzheimer's disease, the operation may not be of benefit. Pneumoencephalography is often essential to differentiate cases where an intracranial tumor is involved in patients having symptoms similar to those of normal pressure hydrocephalus. Rapid improvement in mental symptoms usually follows insertion of a satisfactory shunt. Classification of this disease for purposes of analysis has delineated 2 large groups: group 1 consists of patients with complete or partial CSF obstruction with no definitely established etiology. Subclassification of this group is: 1A, typical clinical syndrome—enlarged ventricles with no air over the convexity subarachnoid space; 1B, similar to 1A, except that some air has entered the surface CSF pathways; 1C,

patients with histories and findings typical of Alzheimer's or a related dementing illness. Group 2 includes patients having a complete or partial CSF obstruction, in whom specific etiologic factors are present: group 2A, subarachnoid hemorrhage; 2B, trauma; 2C, intracranial tumors and surgery; 2D, meningitis; and 2E, aqueduct stenosis. Possible explanations for the relationship of enlarged ventricles to normal CSF pressure in these cases include: intermittent or initially high CSF pressure; activation of arrested hydrocephalus by trauma; force-pressure relationships; expansion due to pulsatile forces; alterations in cerebral blood flow; and change in direction of CSF flow. The mechanism of this syndrome probably involves a number of factors, working singly or in combination. (49 refs.) - *M. S. Fish.*

1096 **NASH, D. F. ELLISON.** In: studies in hydrocephalus and spina bifida (symposium). *Developmental Medicine and Child Neurology*, Supplement No. 22, 12(6):1-11, 1970.

Recent improvement in the successful treatment of spina bifida has resulted from major advances in a variety of fields of medicine. While early removal of the tumor may not always be necessary, prompt and complete management of associated problems can reduce early mortality from about two-thirds to one-fifth, and education from nursery school age can assure independent existence in many cases. Urinary retention and incontinence are now dealt with in a variety of ways, including transurethral resection and ileocutaneous ureterostomy; ventriculo-vascular shunts for hydrocephalus now can often preserve not only life but intelligence also. Advances in orthopedic surgery, made possible by antibiotics, and developments in limb prostheses have aided in the treatment of skeletal deformities and paraplegia. With early management of these physical defects, supervised nursery education can often begin as early as the age of 2 and, providing that the problems of incontinence have been solved, the child frequently can be integrated later into a normal school. (6 refs.) - *M. S. Fish.*

St. Bartholomew's Hospital
London E.C.1, England

1097 **BANISTER, PHILIP.** Congenital malformations: Preliminary report of an investigation of reduction deformities of the limbs, triggered by a pilot surveillance system. *Canadian Medical Association Journal*, 103(5):466-472, 1970.

No etiologic factor was elucidated for the increased number of children born in Alberta, Canada, with reduction deformities of the limbs. It is suggested that a pilot surveillance program be extended to other provinces to provide considerably increased data. Possibly, certain teratogenic agents could be ruled out, but genetic or exogenous influences would not be among these. In this study, there were insufficient data available concerning maternal nutrition and the use of certain non-nutrient materials during pregnancy, family history, and various environmental influences. (16 refs.) - *E. Kravitz.*

Department of National Health and Welfare
Ottawa 3, Ontario, Canada

1098 **FISCHER, BOGUSLAV H.** Hyperbaric oxygen treatment. *Developmental Medicine and Child Neurology*, 11(6):712-717, 1969.

Favorable results are reported for the use of oxygen under pressure as a surgical adjunct for infected meningomyelocele in an uncontrolled study on 8 newborn babies. Humidified 100% oxygen was applied at a flow rate of 1-4 liters per minute and a pressure of 22 mm Hg/1.03 atmospheres absolute. One child was treated after surgery following infection and suture rupture; improvement was noted 6 hours after commencing oxygen therapy, and the wound closed after 19 days of treatment. Seven children received the oxygen presurgically; none transferred their infections to the central nervous system. There was rapid cessation of cerebrospinal fluid leakage, granulation and epithelial formation, and microbial inhibition. It is suggested that this procedure may contribute toward the earlier closure of meningomyelocele and thereby minimize the sequelae of physical or mental malfunctioning. (5 refs.) - *E. Kravitz.*

New York University Spina Bifida Study Group
400 East 34th Street
New York, New York 10016

1099 **DUCKETT, SERGE; CHRISTIAN, JOE C.; THOMPSON, JERRY N.; & DREW, ARTHUR L.** The ultrastructure of

metachromatic bodies in cultured fibroblasts in Hunter's syndrome. *Developmental Medicine and Child Neurology*, 11(6):764-770, 1969.

Differences are described for fibroblasts in tissue culture from persons with Hunter's syndrome, or genetic carriers of this syndrome, when compared with fibroblasts from normal people. Members of a single family provided the fibroblasts from skin punctures. Three males — 2 brothers, and a maternal cousin — had Hunter's syndrome, metachromatic bodies were present in the cytoplasm of fibroblasts from all of these 3 males. These metachromatic bodies were also observed in the sister, mother, and maternal grandmother (symptomless carriers) of the brothers. Phase microscopy revealed refractile dense inclusion bodies. Osmophilia of the granules was confirmed by electron microscopy. Normal controls showed no metachromatic bodies and smaller fibroblasts. The father's fibroblasts were normal; this suggested a sex-linked mucopolysaccharidosis. (6 refs.) - *E. Kravitz.*

Jefferson Medical College
Philadelphia, Pennsylvania 19107

1100 AMMANN, FERDINAND. Clinical and genetic investigations concerning the Bardet-Biedl syndrome in Switzerland (Investigations cliniques et genetiques sur le syndrome de Bardet-Biedl en Suissee). *Journal de Genetique Humaine*, 18 (Supplement), 1970, 310 p.

An historical review of the literature precedes a clinical classification of the Bardet-Biedl syndrome. Two variants are also included: Biemond's syndrome and Alstrom-Hallgren syndrome. This special study is the result of work done since 1959 on the epidemiology of tapeto-retinal degeneration in Switzerland. Clinical observations of the Bardet-Biedl syndrome, the essential components of which are an atypical tapeto-retinal degeneration and a malformative endocrine complex, were conducted at the Institute for Medical Genetics in Geneva. The syndrome is primarily characterized by alterations of the fundus oculi, obesity of the truncular Babinski-Frohlich type, hypogenitalism, anomalies of the extremities, and psychic and neurological disorders, including oligophrenia, spasticity, and various extrapyramidal disorders. Clinical and genetic study would seem to confirm the hypothesis of a temporary fetal hydrocephalus as the basis for action of the responsible gene, and suggests an autosomal recessive mode of inheritance. The frequency of the Bardet-Biedl syndrome in Switzerland, its geographical distribution, and the problems of genetic counseling in such cases are also discussed. (103-item bibliog.) - *N. Mize.*

Institut de Genetique medicale
Universite de Geneve
Geneva, Switzerland

1101 To weigh and to consider. *Lancet*, 2(7674):641, 1970.

Watching the pregnant woman's weight is designed to assess maternal obesity, the course of eclampsia, and placental insufficiency. Hamlin in Australia claims to have eliminated pre-eclampsia and eclampsia by controlled weight gain between the twentieth and thirtieth weeks. Since 1916, weight measurement has helped detect incipient toxemia. At Hammersmith Hospital, London, using strictly defined data, investigators are giving low-weight gain more attention now; serial readings of weight gain and girth changes are assessed against fetal distress, perinatal death, and dysmaturity. Correlations are clear between lack of increase in maternal weight and girth in later pregnancy, and intrauterine growth retardation. Chronic reduction of placental transfer is now well established as the acute and more readily recognizable fetal distress (the latter seems commoner in small-for-dates babies from women with static or falling weight and girth measurements). The bigger the battery of safe investigations, the more likely a fetal prognosis will be accurate. (10 refs.) - *B. Berman.*

1102 BLAKE, A. M.; COLLINS, L. M.; LANGHAM, J.; & REYNOLDS, E. O. R. Clinical assessment of apnea-alarm mattress for newborn infants. *Lancet*, 2(7665):183-185, 1970.

An alarm mattress for apnea proved useful in a 6-month study on 30 newborn babies; 27 were premature. Each breath of a child produces a voltage change which, in turn, discharges a capacitor; the capacitor then begins to recharge until the next breath and discharge. The cessation of breathing (movement) permits a state of full

charge to be reached; this sets off an alarm. There were no alarms for 3 infants; 3-94 alarms for 24 infants, requiring 1-55 peripheral stimulations per child for 4 children; and 509-717 alarms for 3 infants, requiring 61-220 stimulations per child. It is suggested that the alarm mattress should be augmented by a cardiac rate meter in severe pulmonary conditions such as hyaline membrane disease. (6 refs.) - *E. Kravitz.*

University College Hospital
London, W.C.1, England

1103 Congenital malformations. *Lancet,* 2(7665):194-195, 1970.

This brief review of data on congenital malformations indicates that there is more central nervous system malformation among females, a seasonal variation of the incidence in England, and a close relationship between neural-tube anomalies and cardiovascular death rates in women 25-54 years old. The central nervous system pathologies include anencephaly, spina bifida, and hydrocephalus. Seasonal variation of anencephalic births featured an excess in winter and a peak in October in Belfast, but not in the United States. However, the United States had increased incidences of cleft lip, hypospadias, and positional foot defects during the earlier part of the year. (8 refs.) - *E. Kravitz.*

1104 HIDE, DAVID W.; & SEMPLE, CAMPBELL. Coordinated care of the child with spina bifida. *Lancet,* 2(7673):603-604, 1970.

The coordination of various aspects of the treatment and care of children with spina bifida, as practiced at Oxford, is described. About 40 children are seen each year with this condition. Senior personnel include an orthopedic surgeon and a pediatrician, aided by a medical record keeper. Others include a pediatric clinical psychologist and a pediatric surgeon (for initial back closure, valve insertion, and urologic surgery); consultants in pediatrics, orthopedics, and physical medicine; and a physiotherapist, medical social worker, and nurse (for proper urine sampling). The local medical officer, family physician, or health visitor sits in irregularly. A maximum of 8 children, with parents present, are studied per session, each individually by each specialist; this is followed by a group discussion in private. The parent is then advised of the recommendations by the professional person with the best rapport. Summaries are prepared for the family physician and others. (No refs.) - *E. Kravitz.*

University of Oxford,
Oxford, England

1105 Scan technique brings surprises. *Medical World News,* 11(46):40 I, 1970.

Scinticisternography, as used in the diagnosis of communicating hydrocephalus, gave unexpected results when applied in normal persons. During this procedure, isotopically labeled human serum albumin is injected into the spinal column; external scintillation counts are made periodically in various areas of the spine and head. In 60 normal persons, 25% had sufficient leakage from the subarachnoid space to negate meaningful interpretation; there was ventricular reflux, usually diagnostic of communicating hydrocephalus in 3. Ascent of the labeled albumin was very rapid in 11 persons and slow in 13. Some persons had greater and more rapid activity on the left side of the head, and 2 had greater right-side activity. (No refs.) - *E. Kravitz.*

1106 The fetal addict. *Medical World News,* II(52):5-6, 1970.

Embryonic toxicity and even death may result from maternal use of various drugs during pregnancy. Children born to alcoholic mothers sometimes exhibit withdrawal symptoms; children of morphine-addicted mothers show signs of physical dependence, which usually results in infant death if unrecognized. Drugs given to a mother just before delivery appeared to alter the baby's response to visual stimuli for 2-4 days. Tranquilizers, barbiturates, and sedatives may affect the fetal nervous system, especially during early pregnancy. Congenital drug effects may cause subsequent behavioral problems. (No refs.) - *E. Kravitz.*

1107 STOCKS, PERCY. Incidence of congenital malformations in the regions of England and Wales. *British Journal of Preventive and Social Medicine,* 24(2):67-77, 1970.

Incidence and distribution of congenital malformations during the years 1961-65 were studied in 25 countries, with emphasis on the situation in England and Wales. Sex ratios of female to male rates of infant mortality attributed to congenital malformations were found to be highest in Northern Ireland, Scotland, Eire, The Netherlands, England and Wales, and Canada; rates in Scandinavia were low. The high rates were a product of a large proportion of deaths from malformations of the neural tube, with incidence in females higher than in males. The United States ranked thirteenth, with a death rate under one year per 1,000 live births of 379 for males, 334 for females, yielding a female-male ratio of 0.881. For England and Wales, infant mortality of males in 1957-66 from all malformations was highest in the North and Northwest areas of England and in Wales, while the East, Southeast and South of England had the lowest rates. In the Northern and North Midland regions, South Wales and the Merseyside and West Midland conurbations, female rates exceeded those of males. Prenatal and postnatal deaths at ages 0-1 year during 1963-66 showed a downward pattern of incidence from northwest to southeast, a trend which was even stronger in neural-tube malformation mortality. Death rates of women aged 25-54 from cardiovascular diseases, nephritis, stomach cancer and bronchitis evidence regional distribution much like that for neural-tube malformations. It is concluded that some genetic or environmental factor affects both the incidence of central nervous system congenital malformations and female mortality from these other diseases. (13 refs.) - *M-E. Sayre.*

34 Brompton Avenue
Colwyn Bay, North Wales, England

1108 ELWOOD, J. H. Anencephalus in Belfast: Incidence and secular and seasonal variations, 1950-66. *British Journal of Preventive and Social Medicine,* 24(2):78-88, 1970.

During the years 1950-1966, it was found that Belfast, Northern Ireland had the highest incidence of anencephalic stillbirths and infant deaths of all communities in Great Britain. Among 147,825 births of at least 28 weeks' gestation, 584 were anencephalic stillbirths and infant deaths. The incidence was at least 3/1000 births for each year surveyed, and during 1961-66, it averaged 4.21/1,000 births. Long-term secular variations in incidence from year to year and an overall increase in frequency were shown for Belfast. Frequency also increased in Dublin (Ireland), Scotland, and South Wales. In addition, Belfast manifested a seasonal trend in anencephalic births during the years 1956-66, with the largest number occurring in October and generally a higher incidence in winter than in summer. Comparisons are made with other communities in Britain and with New York State and Boston, Massachusetts, where a high proportion of the population is of Irish extraction. (73 refs.) - *M-E. Sayre.*

Queen's University
Belfast, Northern Ireland

1109 BUCHTA, RICHARD; & MACE, JOHN. Craniocarpotarsal dysplasia: A syndrome which may be more prevalent than hitherto appreciated. *Clinical Pediatrics,* 9(5):298-299, 1970.

An MR infant with craniocarpotarsal dysplasia, of which 11 examples have been previously reported, characterized by enophthalmos, skeletal and facial anomalies, and ulnar deviation of the fingers. All but one patient reported to date were said to have normal intelligence. In the present case, the child fed poorly from birth and was hospitalized at 3 months. Myoclonic seizures developed. At 5 months, she developed aspiration pneumonia which proved fatal. A test for rubella titer had been positive in a 1:4 dilution. EEG and EKG revealed additional anomalies, and autopsy showed absence of the left olfactory nerve. Chromosomal studies of the child and parents showed no abnormalities; abnormal karyotype would rule out craniocarpotarsal dysplasia. It is not known whether MR is an element of the general abnormality of patients with this syndrome or results from aspiration and anoxia. Hypsarrhythmia may also be contributory to mental and motor retardation in this patient. (8 refs.) - *M-E. Sayre.*

Naval Hospital
San Diego, California 92134

1110 SCHROFFNER, WERNER G.; & *FURTH, EUGENE D. Hypogonadotropic hypogonadism with anosmia (Kallmann's syndrome) unresponsive to

clomiphene citrate. *Journal of Clinical Endocrinology and Metabolism*, 31(3):267-270, 1970.

Administration of clomiphene citrate, a substance believed to exert a stimulatory effect on the pituitary-hypothalamic axis, did not increase plasma levels of pituitary follicle stimulating and luteinizing hormones (FSH and LH, respectively) in a patient with hypogonadotropic hypogonadism with anosmia (Kallman's syndrome). The S, a 19-year-old male, had bilateral gynecomastia, inadequate masculinization, and was unable to smell common odors (anosmia), the latter abnormality also occurring in the father, indicating an autosomal mode of inheritance. Reports of family members of other Ss with this syndrome indicate the occurrence of such disorders as color blindness, synkinesia, and MR, though these conditions were not present in this S. The S's lack of response to clomiphene citrate, in contrast to other reported results of this treatment, indicates the possibility of the existence of 2 forms of the disorder. (24 refs.) - *M. S. Fish.*

*Albany Medical College
Albany, New York 12208

1111 **CHIBA, SHUNZO; MOTOYA, HISASHI; SHINODA, MINORU; & NAKAO, TOORU.** Myoclonic encephalopathy of infants: A report of two cases of 'dancing eyes' syndrome. *Developmental Medicine and Child Neurology*, 12(6):767-771, 1970.

A report of 2 cases of myoclonic encephalopathy (a rare disorder characterized by "dancing eyes", extreme irritability, somatic myoclonic ataxia, acute onset in infancy, protracted and nonprogressive nature with regressions and recurrences, and favorable response to corticoid therapy) brings to 16 the total number of known cases. One S was a 10-month-old male with characteristic symptoms, in whom spontaneous regression occurred 17 months after the onset of symptoms. This S was MR and had a marked speech defect on follow-up. Symptoms appeared in the other S, a female, at 16 months of age and, as the condition deteriorated, adrenocorticotropic hormone (10 units/day for a week) was administered without effect, followed by 2 mg of betamethasone per day. The latter treatment brought about rapid but limited improvement. At 3 weeks the dose was reduced to 1 mg/day and was discontinued at 30 months. At follow-up (42 months of age) intelligence and speech were retarded, hypotonia and slight ataxia persisted, but somatic growth was normal. Normal routine laboratory findings in both Ss were normal. The frequent response to steroid therapy in Ss with this disorder suggests the possibility of an allergic or autoimmune etiology; however, a viral encephalitic process limited to the brain stem may also be responsible. (7 refs.) - *M. S. Fish.*

Sapporo Medical College
S.1 W. 17 Sapporo, Japan

1112 **BARTSOCAS, CHRISTOS S.; & TSIANTOS, ALEXANDER K.** Mental retardation with absent fifth fingernail and terminal phalanx. *American Journal of Diseases of Children*, 120(5):493-494, 1970. (Letter)

A case in which MR was associated with an absent fifth fingernail and terminal phalanx has characteristics comparable to those of 3 previously reported cases. Normal physical development, however, occurred for this S in contrast to the other 3 cases in which feeding problems during infancy were reported. The female S was the product of an unremarkable pregnancy and delivery but was retarded in development and had no nails on the thumbs, big toes, or the fifth digits of either hands or feet. Roentgenographic studies revealed the absence of terminal phalanges of the fifth fingers of both hands and hypoplastic terminal phalanges of the toes. The facial features were coarse (prominent forehead, thick lips, wide mouth, bushy eyebrows, flat nasal bridge, and thick, upturned nose). Laboratory studies gave normal values. The case may be a variant of hereditary osteo-onycho-dysplasia. (3 refs.) - *M. S. Fish.*

No address

1113 **PHILLIPS, C. I.** Hereditary macular coloboma. *Journal of Medical Genetics*, 7(3):224-226, 1970.

Macular coloboma, a disorder characterized by the presence of an area of 2-4 disk diameters in the retina with total or considerable chorioretinal maldevelopment, can occur either unilaterally or bilaterally and with or without extraocular

involvement. In the cases where the disorder is unilateral, absence of a positive family history often indicates that the condition is acquired (choroidoretinitis due to toxoplasmosis or larval toxocariasis). Otherwise, the condition is likely inherited, usually dominantly. When the condition occurs bilaterally, a hereditary basis is almost always involved. Coloboma with extraocular involvement is a very rare condition. Few published accounts of this latter abnormality have appeared; however, one such family had macular coloboma accompanied by apical dystrophy (rudimentary nails on the index finger of each hand and the big toe of each foot and other skeletal abnormalities involving the phalanges of the toes and fingers, including a tendency to atrophy). A 16-year-old female from another family and her brother had macular colobomata associated with cleft palate and flexion deformities of the joints in the little fingers. In addition, the girl (but not the brother) was MR, physically retarded, had bilateral genu valgum, and extremely small feet. (15 refs.) - *M. S. Fish.*

Royal Eye Hospital
Oxford Road
Manchester M13 9WH, England

MEDICAL ASPECTS – Etiologic Groupings

Gross brain disease (postnatal)

1114 **HAGBERG, B.; HANSSON, O.; LIDEN, S.; & NILSSON, K.** Familial ataxic diplegia with deficient cellular immunity: A new clinical entity. *Acta Paediatrica Scandinavica,* 59(5):545-550, 1970.

An apparently new entity, combining neurological and immunological factors (familial occurrence suggests hereditary origin), is reported in the case of 2 siblings, a boy and a girl, with ataxic diplegia, a truncal tremor, and inadequate cellular immunity. Post-mortem findings on the girl, who died of varicella while undergoing steroid therapy for hemolytic anemia, showed multiple dysplastic changes reflecting the prenatal beginnings of the neurological syndrome. The boy, who was slightly MR, developed acute hemiplegia and periodic septic fever before he died at age 5 years. Autopsy showed a large left-cerebral abscess. The etiology of ataxic cerebral palsy is obscure. Cellular-immunity deficiency in the boy was assumed after failure at contact sensitization and a lack of response to phytohemagglutinin. On some occasions, his peripheral blood showed subnormal lymphocyte count but a fair production of immunoglobulins. (17 refs.) - *B. Berman.*

Akademiska Sjukhuset
Uppsala, Sweden

1115 **YUNIS, EDUARDO J.; & LEE, ROBERT E.** Tubules of globoid leukodystrophy: A right-handed helix. *Science,* 169(3940):64-66, 1970.

The extensive demyelination found in Krabbe's disease is associated with the accumulation of a large number of globoid cells in the white matter of the brain. The cytoplasmic tubules of Krabbe's and Gaucher's diseases have a morphologic similarity and resemble a negatively stained beef cerebroside. This suggests that galactose cerebroside accumulates in the globoid cells. In globoid leukodystrophy and Gaucher's disease, the tubules have similar 60-angstrom periodic bandings. Both diseases present a right-handed helical twisting of the tubules. (5 refs.) - *J. K. Wyatt.*

Children's Hospital
Pittsburgh, Pennsylvania 15213

1116 **SUZUKI, KINUKO; & GROVER, WARREN D.** Krabbe's leukodystrophy (globoid cell leukodystrophy): An ultrastructural study. *Archives of Neurology,* 22(5):385-396, 1970.

A microscopic analysis of materials from brain and peripheral-nerve biopsies from an infant with globoid-cell leukodystrophy (GLD) revealed a normal cerebral cortex, diffuse demyelination and a mass accumulation of abnormal cells in the white matter, and some axonal degeneration in the peripheral nerve. GLD (a familial, neurologic disorder of early infancy) generally presents convulsions, spastic quadriplegia, palsy, and vision and hearing disorders, and is confined almost

entirely to the central nervous system with a rapidly progressive course. Globoid and epithelial cells, except for the numbers of nuclei, were morphologically identical, with numerous abnormal cytoplasmic filaments and inclusions. Gliosis and scarcity of myelin sheaths were evident in the cerebral white matter, and reactive astrocytes packed with cytoplasmic glial filaments were evident. Segmental degeneration, endoneurial fibrosis, and myelin degeneration characterized the sural nerve. Tubular inclusions like those in the cerebral white-matter globoid cells appeared in the endoneurial macrophages. (27 refs.) - *B. Berman.*

University of Pennsylvania Hospital
Philadelphia, Pennsylvania 19104

1117 **WALSH, J. C.; TURTLE, J. R.; MILLER, SUSAN; & McLEOD, J. G.** Abnormalities of insulin secretion in dystrophia myotonica. *Brain*, 93(4):731-742, 1970.

Twenty patients with clinical and electromyographic evidence of dystrophia myotonica were given an oral glucose load and glucose tolerance and insulin response followed. While only 2 of these individuals showed an abnormal glucose tolerance curve, 17 had markedly elevated insulin secretion. Ten of 24 clinically unaffected relatives had a similar abnormal insulin secretion. Two Ss with myotonia congenita had normal insulin secretion. An abnormal insulin response, then, is associated with dystrophia myotonica and may prove to be a clue in early detection of the disease. (15 refs.) - *E. L. Rowan.*

University of Sydney
Sydney, Australia

1118 **CROME, L.** Subacute necrotizing encephalomyelopathy associated with renal and arterial lesions. *Brain*, 93(4):709-714, 1970.

A 6-month-old infant died after a 3-month course of convulsions, ataxia, failure to thrive, and clinical acidosis and was found at autopsy to have evidence of subacute necrotizing encephalomyelopathy (SNE). Foci of necrosis without a surrounding glial reaction were found in the corpora striata, thalami, and substantiae nigrae. Many arteries were thickened, and coronary arteries showed an intimal infiltration of large, lipid-containing cells. The kidneys showed tubular necrosis and glomerular sclerosis. The arterial and renal changes had not been previously described in SNE. (9 refs.) - *E. L. Rowan.*

Queen Mary's Hospital for Children
Carshalton, England

1119 **CAPRARO, VINCENT J.; DILLON, WILLIAM P.; & CALABRESE, JOSEPH S.** Morgagni's syndrome: Metabolic craniopathy. *Obstetrics and Gynecology*, 35(4):565-569, 1970.

Morgagni's syndrome, a disorder generally detected in older females, is described for 3 young women diagnosed before age 22 and a 38-year-old female. All had several of the typical features of this syndrome which is usually marked by obesity, hirsutism, and hyperostosis of the skull and other more inconsistent symptoms such as MR or mental deterioration, worry, depression, headaches, menstrual disorders, vertigo, weakness, memory impairment, and neurologic disorders. The diagnosis for 3 of the Ss was definite; the fourth who had several characteristics of the syndrome also had polycystic ovaries characteristic of Stein-Leventhal syndrome. Although hyperostosis is the most objective feature of Morgagni's syndrome, its role, if any, in the pathogenesis is unknown as is that of the pituitary and hypothalamus glands and abnormal gonadotropin secretion, also occasionally cited as having a possible causal relation to the disorder. (15 refs.) - *M. S. Fish.*

State University of New York at Buffalo
Buffalo, New York 14209

1120 **WOLFE, S. M.; & *HENKIN, R. I.** Absence of taste in type II familial dysautonomia: Unresponsiveness to methacholine despite the presence of taste buds. *Journal of Pediatrics*, 77(1):103-108, 1970.

An apparently inherited autosomal recessive disorder characterized by absence of taste despite presence of taste buds and MR is described for 2 sibs. In contrast to patients with type I familial dysautonomia (Riley-Day syndrome) where taste buds are absent but taste acuity is responsive to

parenteral methacholine, the 2 Ss, classified as having the type II disorder, showed no such response. Although MR, the Ss had sufficient mental acuity to be responsive to the various sensory test procedures which included examination for 4 taste qualities (salt, sweet, sour, and urea) before and after methacholine administration and determination of thresholds for smelling vapors of pyridine, nitrobenzene, and thiophene. Response to these vapors was normal. The mother exhibited normal thresholds for both taste and olfaction. Evidence for an anatomical end-organ or a central or peripheral nervous system defect is lacking for the type II disorder, and the mechanism of the deficit is unknown. (24 refs.) - *M. S. Fish.*

*National Heart and Lung Institute
Bethesda, Maryland 20014

1121 **MABRY, C. CHARLTON; BAUTISTA, ARTURO; KIRK, RICHARD F. H.; DUBILIER, LOUIS D.; BRAUNSTEIN, HERBERT; & KOEPKE, JOHN A.** Familial hyperphosphatasia with mental retardation, seizures, and neurologic deficits. *Journal of Pediatrics*, 77(1):74-85, 1970.

Observations of 4 family members with hyperphosphatasia associated with SMR, seizures, and neurologic effects suggest the possibility that the abnormalities may result from an inherited autosomal recessive disorder. The Ss were 2 brothers (ages 10 and 15 yrs), their 13-year-old sister, and a 10-year-old first cousin. Parents' marriages were both consanguineous. Fifty-two kindred members who were examined were found to be normal. Although apparently normal at birth, development of the Ss ceased by the end of the first year, and during the second and third years major seizures and neurologic abnormalities began to appear. Except for excessive circulating alkaline phosphates (AP) and clusters of "foam" cells found in the rectal lamina propria of 3 Ss, laboratory studies disclosed no unusual findings, including those usually associated with hyperphosphatasia. Circulating AP appeared to be derived from liver as shown by examination of sera and tissue by enzyme specificity, inhibition, electrophoretic, antibody, and gel filtration methods. The high excess of AP without an apparent dysfunction of usual organ sources suggests that altered protein binding may be involved. (46 refs.) - *M. S. Fish.*

University of Kentucky
Lexington, Kentucky 40506

1122 **BRION, S.; MIKOL, J.; & GRAVELEAU, J.** Leucodystrophie metachromatique de l'adulte jeune: Etude clinique, biologique et ultrastructurale (Metachromatic leukodystrophy in the young adult: Clinical, biological and ultrastructural study). *Revue Neurologique*, 122(3):161-176, 1970.

Data are presented on a S who has a late juvenile form of metachromatic leukodystrophy with an onset of the illness at 13 years of age and a duration of 9 years. Tests performed after 7 years' illness showed mental deterioration (IQ 77). Clinical observations extending over several years as well as the results of biopsies of the central nervous system, sensory nerve, muscles, and the liver are presented. Laboratory values showed urinary excretion of sulfatides, without aryl sulfatase A; histological examination showed metachromatic deposits with a typical ultrastructural morphological appearance in the central nervous system. Complicating mucopolysaccharidosis was a possibility, but it could not be demonstrated despite the presence of clear vacuoles in the Schwann's cells of the peripheral nerve. (21 refs.),- *K. Baer.*

Hopital de la Salpetriere
Paris, France

1123 **NUUTILA, A.** Dystrophia retinae pigmentosa–Dysacusis syndrome (DRD): A study of the Usher- or Hallgren syndrome. *Journal de Genetique Humaine*, 18(1):57-88, 1970.

Pigmentary retinal dystrophy and congenital sensory-neural hearing impairment (DRD) form a syndrome known in the past as Usher- or Hallgren syndrome. It is a recessively inherited disease due to a completely penetrating gene. The present investigation is concerned with the geographical distribution of DRD in Finland, the factors affecting its prevalence, and the clinical (particularly central nervous system) symptoms caused by the DRD gene in homozygous subjects. DRD accounted for most of the combinations formed by pigmentary retinal dystrophy and hearing impairment within the area studied. In Finland, the frequency of the syndrome is

estimated at 3.5/100,000. No additional effects on the central nervous system could be shown, except for pigmentary dystrophy and hearing impairment. Besides the 133 patients listed, 4 additional ones presented neuro-sensorial deafness associated with blindness. There was one additional case of Turner's syndrome with deafness and retinitis punctata albescens. (71 refs.) - *K. Baer.*

University of Helsinki
Helsinki, Finland

1124 **WALBAUM, R.; FONTAINE, G.; LIENHARDT, J.; & PIQUET, J. J.** Surdite familiale avec osteo-onycho-dysplasie (Familial deafness with osteo-onychodysplasia). *Journal de Genetique Humaine,* 18(1):101-108, 1970.

A brother and a sister, the only children of normal, nonconsanguineous parents, show MR associated with perceptive deafness, onychodysplasia, hypoplasia of the finger tips, thumbs with 3 phalanges, and "decapsalidic" fingerprints. The familial observation is similar to those of Feinmesser and Zelig and of Goddman and associates; it is difficult to say whether we are dealing with 3 different diseases or with one single syndrome. (8 refs.) - *Journal abstract.*

No address

1125 **BOIS, E.; & ROYER, P.** Association de nephropathie tubulo-interstitielle chronique et de degenerescence tapeto-retinienne: Etude genetique (Chronic tubulo-interstitial nephropathy associated with tapeto-retinal degeneration: Genetic study). *Archives Francaises de Pediatrie,* 27(5):471-481, 1970.

The relation between 2 associated hereditary diseases — chronic tubulo-interstitial nephropathy resembling nephrophthisis and tapeto-retinal degeneration — has been studied on the basis of their occurrence in 8 groups of siblings, 2 observed personally. The ratio of healthy Ss to those affected renders an independent transmission of the diseases improbable. Our search for a close connection between the 2 responsible genes did not enable us to demonstrate any linkage phenomenon. Consequently, it is likely that the 2 diseases are due to a single pleiotropic gene finding expression in various ways. In some cases where dissociation of the renal and retinal affections occur, it is not possible, however, to exclude the possibility that the sample analysed may be heterogeneous. When this hypothesis is used, then the action of one single gene appears to be likely in the cases of siblings who consistently present a combination of the 2 diseases. In the other observations, which present dissociations, the lesions might be due to the action of two independent genes, the simultaneous manifestation of which would be favored by consanguinity. (39 refs.) - *K. Baer.*

Hopital Enfants-Malades
75-Paris 15e, France

1126 **TKACHEV, R. A.; MARKOVA, E. D.; GOTOVTSEVA, E. V.; BAUMAN, L. K.; BARKHATOVA, V. P.; ALIEVA, L. M.; & IVANOVA-SMOLENSKAIA, I. A.** Patogeneticheskoe znachenie obmennykh narushenii pri nasledstvennykh ekstrapiramidnykh zabolevaniiakh (Pathogenetic significance of metabolic disorders in hereditary extrapyramidal diseases). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova,* 70(4):512-520, 1970.

Investigation of 150 patients with hepatocerebral dystrophy revealed specific disorders of copper metabolism and characteristic disturbances of amino acid metabolism, a significant decrease in nucleic acid concentration in the blood and liver tissue, and expressed disturbances in the adenylic system. An increase in hydroxytyramine excretion was significant for the development of extrapyramidal motor disorders. To establish a correlation between findings in patients and their close relatives, electroencephalographic and electromyographic tests were administered to a group of 83 clinically healthy parents, children, siblings, cousins, and other relatives of the Ss. The obtained data confirmed the presence of expressed extrapyramidal pathology in the majority of cases, which was verified by biochemical investigation. Metabolic disorders which may be connected with genetic factors were established for the patients and for some of their normal relatives. Disturbances in copper metabolism, which are directly dependent upon primary genetic defect, were the most characteristic manifestations for hepatocerebral dystrophy. Effective pathogenetically oriented therapy is possible for

hepatocerebral dystrophy, and preventive treatment is recommended in cases of early diagnosis. (31 refs.) - *B. J. Grylack.*

Neurological Institute of the
Academy of Medical Sciences
Moscow, Union of Soviet Socialist Republics

1127 **GLICK, THOMAS H.; LIKOSKY, WILLIAM H.; LEVITT, LAWRENCE P.; MELLIN, HAROLD; & REYNOLDS, DAVID W.** Reye's syndrome: An epidemiological approach. *Pediatrics,* 46(3):371-377, 1970.

Of 62 cases of acute encephalopathy with fatty degeneration of the viscera (Reye's syndrome) reported in the United States and Puerto Rico over a 30-month period, most were in areas having a high suspicion index, indicating that actual national incidence may be higher than that previously documented. Epidemic patterns of the syndrome, several concurrent with influenza B virus infection and others associated with chickenpox, suggest that immunological or chemical prophylactic procedures may be indicated. Ages of the patients ranged from 2½ months to 15 years. Fifteen patients survived, 12 of whom had been treated with adrenocortical steroids or ACTH. Additional studies are required to determine the etiology of the illness, particularly the nature of the viral association. Present data do not implicate medications or exogenous toxins. (23 refs.) - *M. S. Fish.*

National Communicable Disease Center
Atlanta, Georgia 30333

1128 **SOTELO-AVILA, CIRILO; & *SINGER, DON B.** Syndrome of hyperplastic fetal visceromegaly and neonatal hypoglycemia (Beckwith's syndrome): A report of seven cases. *Pediatrics,* 46(2):240-251, 1970.

Although neonatal hypoglycemia has been documented in only 18% of the cases of hyperplastic fetal visceromegaly (Beckwith's syndrome), it may be one of the most common features of the disorder and can result in serious effects on the infant. The syndrome was observed in 7 of 40 infants with omphalocele. All 7 had 3 or more of the clinical and pathological features of the syndrome, of which omphalocele or umbilical hernia, macroglossia, excessive body weight, and renal enlargement are the most characteristic clinical abnormalities. Hypoglycemia was observed in 2 or 3 patients tested. Of the 7 cases studied (4 by autopsy), 2 of the 3 survivors (both females) were MR at ages 13 and 8½ years, respectively; the surviving male was apparently mentally normal. Pathological findings during autopsy showed that adrenal cortical cytomegaly and hypertrophy and hyperplasia of the islets of Langerhans were the most consistent abnormalities; however, other developmental defects of the cardiovascular, gastrointestinal, and genitourinary systems were observed. Renal enlargement was also present. A number of other congenital developmental abnormalities were found in 6 of the 7 patients. The syndrome is associated with a large variety of abnormalities, and infants may have relatively few or many of the signs and symptoms. The cause of the hypoglycemia in some of these cases is unknown, but it may be associated with functional hyperinsulinism. Recognition and treatment of the hypoglycemia in patients who do not die during the first month is important for later survival. (45 refs.) - *M. S. Fish.*

*Texas Children's Hospital
Houston, Texas 77025

1129 **ARANT, B. S.; *BRACKETT, N. C.; YOUNG, R. B.; & STILL, W. J. S.** Case studies of siblings with juxtaglomerular hyperplasia and secondary aldosteronism associated with severe azotemia and renal rickets – Bartter's syndrome or disease? *Pediatrics,* 46(3):344-361, 1970.

Bartter's syndrome, a disease initially characterized by hyperplasia of the juxtaglomerular complex (J-G) with hyperaldosteronism and a hypokalemic alkalosis and often associated with small stature and MR, should possibly be extended to include patients who also have severe renal disease and overt renal rickets. A study of 2 male sibs from birth to the ages of 3 and 6 years, respectively, has shown that, while exhibiting many of the features of Bartter's syndrome, the Ss also had renal disease, and biopsy of 1 S and autopsy of the other revealed severe glomerular and interstitial nephritis, but only a mild form of the J-G cell hyperplasia which, in Bartter's syndrome, is typically invasive. Both Ss had renal sodium wasting, azotemia, and high aldosterone excretion rates. One S had

severe bone disease. The 6-year-old S who died had an IQ of 38 (Stanford-Binet, Form L-M); the 3-year-old sib had an IQ of 107 and a Social Quotient of 73 (Vineland Social Maturity Scale.) Either the typical cases of Bartter's syndrome represent a distinct disease group or the definition should be extended to include uremia and renal osteodystrophy. (15 refs.) - *M. S. Fish.*

*Medical University of South Carolina
Charleston, South Carolina 29401

1130 **JATZKEWITZ, H.; & MEHL, E.** Cerebroside-sulphatase and arylsulphatase A deficiency in metachromatic leukodystrophy (ML). *Journal of Neurochemistry*, 16(1):19-28, 1969.

Analysis of autopsy material of patients with metachromatic leukodystrophy (ML) has shown that arylsulphatase A and cerebroside-sulphatase activity was 1-6% that of controls. Renal cortex, liver, and cerebral white matter from 7 ML patients and 9 controls were extracted and analyzed for sulphatides, cerebrosides, arylsulphatase A and B, cerebroside-sulphatase, and acid phosphatase activities. While cerebroside-sulphatase activity was present in all control specimens, it was reduced to the limit of detection in material from ML cases, as was the activity of arylsulphatase A. Prolonged storage of specimens apparently did not affect enzyme activities. The deficiency of the catabolic enzyme was further demonstrated by the observed increase in the amount of the sulphatides; however, measurements of sulphatide levels in ML-demyelinated cerebral white matter and in kidney did not establish a relation between levels of accumulated sulphatide and the duration of the illness or the age at death. (31 refs.) - *M. S. Fish.*

Max Planck Institut fur Psychiatrie
Munchen 23, Kraepelinstr. 2, Germany

1131 **GRANVILLE - GROSSMAN, KENNETH.** Organic brain disease. In: *Recent Advances in Clinical Psychiatry*, Baltimore, Maryland, Williams and Wilkins, 1971, Chapter 8, p. 240-265.

A number of psychological tests can detect intellectual disability due to brain damage. These include: intelligence tests, particularly when administered to a patient at different times; various new word learning tests in which brain damaged Ss show impairment; paired-associate learning, which indicates memory impairment; and a memory-for-designs test which correlates well with clinical diagnoses for brain damage. Dementia due to hydrocephalus may be associated with a primary brain disorder which causes dilatation of the ventricles or impairment of brain function due to increased intraventricular pressure. The diagnosis of the various forms of this disorder depends on clinical features (intellectual deterioration, memory impairment, psychomotor retardation, and disorientation) and can be demonstrated by air encephalography, isotope ventriculography and encephalography, angiography, electroencephalography, or examination of cerebrospinal fluid. Differentiation of the different forms of this disorder is important since the prognosis after surgical relief of pressure is better for some types, such as communicating obstructive hydrocephalus. Besides pressure reduction, drainage by means of a shunt, usually into the venous blood stream, can be employed in treatment. (134 refs.) - *M. S. Fish.*

1132 **KEITH, ROBERT A.; & MARKIE, GORDON S.** Parental and professional assessment of functioning in cerebral palsy. *Developmental Medicine and Child Neurology*, 11(6):735-742, 1969.

Significant overestimation by parents of the physical and mental abilities of children with cerebral palsy, when compared with evaluation by various professional disciplines, is reported. Differences among these professionals also occur. Parents, a pediatrician, a physical therapist, a teacher, and an occupational therapist independently evaluated 17 children in a nursery school who had cerebral palsy. Mothers and fathers gave similar ratings. The teacher's ratings were lowest. Evaluations were independent of the age of the child and the extent of the handicap. However, overestimation was greater with parents of children with lower developmental quotients. (11 refs.) - *E. Kravitz.*

Claremont Graduate School & University Center
Claremont, California

1133 **JENNETT, BRYAN.** Organs serving no intelligence. *Lancet*, 2(7685):1249, 1970. (Letter)

The question whether to prolong life by surgical means in cases of gross brain damage is rendered difficult for many reasons. In the present state of knowledge, prognostic criteria are ill defined; in the early stages after head injury, widely varying degrees of brain damage present remarkably similar external pictures. Intensive clinical neurological research is needed to develop prognostic criteria so that useless lives will not be prolonged. The forensic demand that the brain be dissected immediately in fatal cases makes it impossible to carry out badly needed research. Society must decide whether lawyers may assist the medical profession by permitting full examination of brains of interest to the neuropathologist. (No refs.) - *B. Berman.*

Institute of Neurological Sciences
Glasgow, Scotland

1134 **HAICKEN, BARRY N.** Congenital hemihypertrophy: Problems in long-term management. *American Journal of Diseases of Children,* 120(4):372-373, 1970.

A case is reported of a 41-year-old man with congenital hemihypertrophy. While pregnant, his mother suffered both mumps and varicella. At birth, he manifested, among other physical anomalies, the gross body asymmetry that is characteristic of the condition, but has never developed the usually-associated MR. At age 15, bilateral varicose veins and right-leg lymphedema developed; 5 years later, the first of numerous attacks of streptococcal cellulitis occurred in the right leg. Septicemia has often followed these attacks. In adult life, the patient developed many medical problems. He is considered to reveal elements of both Klippel-Trenaunay syndrome and lymphedema praecox, associated with hypertrophy of the affected limb. Long-term management of congenital hemihypertrophy must emphasize examination for possible occurrence of: liver, adrenocortical and kidney neoplasms; MR; abnormal sexual development; and the complications of hamartomatous lesions and vascular anomalies. (9 refs.) - *M-E. Sayre.*

Jacobi Hospital
Bronx, New York 10461

1135 **KORNZWEIG, ABRAHAM L.** Bassen-Kornzweig syndrome: Present status. *Journal of Medical Genetics,* 7(3):271-276, 1970.

Bassen-Kornzweig syndrome is a rare disease which is inherited as an autosomal recessive from consanguineous parents or grandparents. From the 19 cases reported in the literature, the clinical characteristics and diagnostic features have been determined: steatorrhoea in childhood because of enlargement of intestinal epithelial cells with triglycerides; acanthocytosis, progressive degeneration of the cerebellum, cerebral ataxia, pigmentary degeneration of the retina, low blood cholesterol, and β-lipoproteinemia. Signs of MR, usually mild, often occur, and cardiac involvement is occasionally noted. Malabsorption, characterized by inability to remove fat in the diet from the intestinal tract, may be the underlying pathology, or the observed phenomena in the red blood cells, CNS, and eyes may be related to lack of low density lipoproteins in the blood. (17 refs.) - *M. S. Fish.*

1 East 63rd Street
New York, New York 10021

1136 **HORNABROOK, R. W.; & MOIR, D. J.** Kuru: Epidemiological trends. *Lancet,* 2(7684):1175-1179, 1970.

A survey of annual mortality statistics for kuru in New Guinea has shown that the total annual deaths since 1964 have continued to decline although the trend is due to decline in deaths of adult females, juveniles, and adolescents, since deaths of adult males have risen during this period. Although gaps in the statistics exist, census patrols provide a fairly accurate check of medical records. The theory that this disease, which is characterized by subacute cerebellar degeneration, is caused by transmission of an infectious particle by cannibalism has been supported by the geographic distribution and chronological sequence of the changes in incidence. The epidemiologic data fail to ascribe a genetic role in the predisposition to kuru. Of particular significance is the virtual disappearance of kuru among children born in areas where the practice of cannibalism has ceased. The reported transmissibility of kuru to chimpanzees by inoculation with tissues from deceased patients and the expanding research on the effects of slow virus infections of the nervous system may, together with the epidemiologic data, provide additional information related to the factors associated with onset of clinical kuru. (13 refs.) - *M. S. Fish.*

Institute of Human Biology
Papua and New Guinea

MEDICAL ASPECTS – Etiologic Groupings
Psycho-environmental

1137 **COURTNEY, K. DIANE; GAYLOR, D. W.; HOGAN, M. D.; FALK, H. L.; BATES, R. R.; & MITCHELL, I.** Teratogenic evaluation of 2,4,5,-T. *Science*, 168(3933):864-866, 1970.

Administration of the herbicide 2,4,5-trichlorophenoxyacetic (2,4,5-T) acid to mice and rats increased the incidence of fetal cystic kidney and cleft palate. In addition to these teratogenic effects, there were such fetotoxic manifestations as an increase in the ratio of liver weight to body weight and the appearance of gastrointestinal hemorrhage. An oral dosage of 10 or 46.4 mg/kg on days 10-15 of gestation significantly increased fetal rat mortality. Data from controls treated with dimethylsulfoxide or honey were compared with the appropriate control data. Administration of dimethylsulfoxide or honey had no adverse fetal effect. Subcutaneous or oral administration of 2,4,5-T yielded similar results. (9 refs.) - *B. Berman.*

National Institute of Environmental Health Sciences
Triangle Park, North Carolina 27709

1138 **MARANS, ALLEN E.** Effects of child rearing patterns on the disadvantaged child. *Clinical Proceedings Children's Hospital of the District of Columbia*, 26(9):275-284, 1970.

The cycle of poverty and its effects on child-rearing patterns produces handicaps which continue from generation to generation. There is an increased incidence of physical impairment at birth among babies born to slum families. "Magical thinking" is often used as a reaction to life's problems and seems to persist because of the quality of early child-rearing patterns, as well as because of disappointments and discouragements. Dependency needs are frequently unmet during childhood because satisfaction of the mother's needs assumes priority over those of the child. Sensory stimulation may be inadequate, excessive, or inappropriate, and the child often copes with this by withdrawing. Multiple mothering may prevent consolidation of the mother-child tie and lead to a reduced commitment to close relationships. Harsh and punitive discipline may result in the sacrifice of age-appropriate accomplishments. Verbal communication is sparse in a slum household and poorly developed verbal abilities may be related to violent actions, poor academic achievement, poor control of feelings and actions, and diminished curiosity. Children may be exposed to frightening behavior, and this may interfere with the development of controls and trust in people. The survival techniques learned by the slum child are a premature consolidation of reactive patterns which interfere with modification by later development or experience. (27 refs.) - *J. K. Wyatt.*

Children's Hospital
Washington, D. C.

1139 **GUSSOW, JOAN DYE.** Bodies, brains and poverty: Poor children and the schools. *IRCD (Information Retrieval Center on the Disadvantaged) Bulletin*, 6(3):3-4, 9-12, 1970.

An urgent need exists for a new formulation of educational handicaps among the poor. The significantly greater mortality and morbidity rates among poor children are at least partly due to the exposure of poor mothers to a complex of unfavorable conditions. School achievement may be affected by this increase in abnormalities of the reproductive process, with resulting physical and mental damage, and by hunger, sickness, and poor health care during the preschool years. Inadequate nutrition may cause brain damage. The character of a sick or malnourished child is altered, because he is less active and loses contact with his surroundings; as a result, he is less responsive. It remains for future studies to determine the exact relationships existing between the characteristics of various states of poor health, including malnutrition, and learning ability. However, it should be the current responsibility of the schools to play a more active role in providing food and health care to poor children, despite the expense, in the likelihood that these

services will significantly increase learning capacity. (6 refs.) - *B. J. Grylack.*

Teachers College
Columbia University
New York, New York

1140 **BROWN, R. I.; & SEMPLE, LORNA.** Effects of unfamiliarity on the overt verbalisation and perceptual motor behaviour of nursery school children. *British Journal of Educational Psychology,* 40(Part 3):291-298, 1970.

Thirty nursery school children from underprivileged socioeconomic environments were tested in familiar and unfamiliar settings. The children (CA 3 to 5 yrs) were required to complete tasks in the areas of motor and perceptual ability and identification of words on 5 separate occasions. In most of the comparisons of different settings, both types of tasks were found to be performed significantly better in the familiar environment. In no case did subjects in the unfamiliar environment give a better performance. Global gazing and freezing behavior were significantly increased in the unfamiliar environment. The obtained results suggest that children who are subjected to tests in a clinic during the preschool years will probably perform far below their optimum score. Children from adverse home environments show greater attention problems in experimental situations than subjects from less adverse conditions. It is apparent that change in performance with regard to familiarity of environment is a significant variable and must be taken into account in the interpretation of behavior, especially in children from underprivileged home settings. (11 refs.) - *B. J. Grylack.*

University of Calgary
Alberta, Canada

1141 **CHISUM, JAMES.** Behind the bad behavior. *American Education,* 6(7):32-34, 1970.

Culturally deprived children with scholastic and behavioral problems in Memphis, Tennessee, can take advantage of a program which combines elements of elementary and secondary education with guidance and psychological services. The personnel involved in the program include supervisors, psychologists, psychological services workers, counselors, and clerical workers. In addition to working directly with the children, some personnel also help to provide parents with mental health services, family counseling, and other services to assist parents in preparing their children for school. Counselors are willing to establish guidance programs for the general school population as well as for special cases. While the program staff engages in much direct action, its main function is to coordinate the work of the schools and existing agencies in solving special problems. The professionals feel that these concepts of service have greatly benefited the school system, and parents have responded by requesting many more elementary counselors on the regular school system staff. (No refs.) - *B. J. Grylack.*

Commercial Appeal
Memphis, Tennessee

1142 **GOLOVAN, L. I.** Roditeli detei, bol'nykh vialotekushchei shizofreniei (Parents of children with an indolent course of schizophrenia). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova,* 70(2):242-246, 1970.

Twenty-five children (CA range 7-16 yrs) who acquired schizophrenia in early childhood or puberty and their 25 pairs of parents were investigated to elucidate the types of character anomalies encountered most frequently among close blood relatives of children with an indolent course of the disease. All of them had a progressive but very slow course of schizophrenia and manifested personality changes in the form of increasing autism, psychopathic symptomatology, and emotional depression at the time of observation. They were often unskilled in motor coordination and lacked childlike vitality and spontaneity in their perception of new situations. Inadequacy of emotional reactions to ordinary situations was manifested early. Ss in the first group of parents (4 mothers and 3 fathers) had suffered from manifest schizophrenic psychoses. In 2 mothers, initial manifestations included affective disorders and depersonalization and subsequent aggravations with a depressive paranoid character. In the fathers, personality changes following attacks resembled peculiarities of continuous schizophrenia. Character anomalies in the second group of parents (12 fathers and 6 mothers) were too deep to be classified as

psychopathies. Some had experienced a psychotic episode or marked character shift in youth, and others were characterized by personality changes with a tendency to autism, emotional bluntness, and reduced mental activity. The 25 parents in the third group suffered from constitutional psychopathies. (11 refs.) - *B. J. Grylack.*

Psychiatric Institute of the
Academy of Medical Sciences
Moscow, Union of Soviet Socialist Republics

1143 **LOBASCHER, M. E.; KINGERLEE, P. E.; & GUBBAY, S. S.** Childhood autism: An investigation of aetiological factors in twenty-five cases. *British Journal of Psychiatry*, 117(540):525-529, 1970.

Comparison of 25 autistic children (CA 4½-17½ yrs) with a control group showed that there were significant differences between the groups in developmental history, parental traits, and neurological and psychological make-up. In the experimental group, 13 with a natal history were postmature, compared with 1 control, and one-fourth of these were below the normal mean birth weight for their gestational age. The autistic Ss showed a higher incidence of labor and neonatal complications, prolonged maternal gestation, and assisted deliveries than did the controls. Neurological evidence and EEG abnormalities demonstrated definite organic cerebral nervous-system pathology in 56% of the Ss and probable pathology in 28%. On the Rimland check list, Ss revealed commonly accepted "autistic symptomatology" (unawareness of others, intolerance of change, and rare signs of pleasure). All Ss had retarded speech, and none rated higher than high-grade defective on the Wechsler IQ test, with most in the SMR range. Parents of those with autism showed significantly more alcoholism, psychiatric illness, and MR than did control parents; patients' parents had less divergent personalities. (14 refs.) - *B. Berman.*

Hospital for Sick Children
London, England

1144 **FRANKENSTEIN, CARL.** Two varieties of secondary retardation. *Topical Problems in Psychiatry and Neurology*, 9:77-93, 1969.

Secondary MR, which implies induction by social or cultural conditions, is an important aspect of MR. Under conditions of an impoverished home and educational environment, the mind of the child will be oriented primarily to the need to possess certain basic objects. As a result, the ability to internalize values and concepts and the realization of adequate relations and abstract thinking processes may be negated. In cultural variety of secondary MR, each developmental phase in the life of the child contributes to the gradual emergence of the cognitive pattern of secondary MR, and fallacious rationalization and reality distortion predominate. To interrupt the cycle of secondary MR, educational methods aimed at gradually helping the child to develop more adequate thought processes and means for solving problems should be utilized, and intensive work with the parents of these children should be initiated to change parental attitudes and expectations and to increase parental understanding and acceptance of long-term learning programs. Emphasis on the intellectual participation of the child is necessary to counteract the negative conditioning and cultural distortions underlying manifestations of secondary MR and its associated patterns of thinking. (18 refs.) - *B. J. Grylack.*

Hebrew University
Jerusalem, Israel

1145 **LESSING, ELISE E.; ZAGORIN, SUSAN W.; & NELSON, DOROTHY.** WISC subtest and IQ score correlates of father absence. *Journal of Genetic Psychology*, 117(2):181-195, 1970.

A study designed to determine the effects of prolonged father absence has shown that in a majority of Ss, prolonged father absence was associated with lower IQ and lower scores on Block Design and Object Assembly regardless of sex or social class. Results indicate that working class, father-absent Ss had generally lower mean verbal and full-scale IQ scores, while middle class, father-absent children had significantly higher mean verbal IQ and comprehension and vocabulary scores than did comparable father-present children. The results obtained from administration of the Wechsler Intelligence Scale for Children and Full Scale IQ tests to 311 boys (mean CA 11 yrs, 10 mos) and 122 girls (mean CA 12 yrs, 6 mos), combined with comparisons between 138 father-absent (2 years or more) Ss and the remaining father-present Ss, indicated that both general and specific deficits occur from absence

of the father. Regardless of sex or social class, father-absent Ss earned lower mean performance IQ than did father-present children. The principal sex differences were limited to arithmetic, in which tests boys had lower scores. Scores of Ss with a stepfather in the home did not differ significantly from those obtained from father-present Ss. (25 refs.) - *M. S. Fish.*

Institute for Juvenile Research
Chicago, Illinois 60611

MEDICAL ASPECTS – Convulsive Disorders

1146 **GERSCH, WILL; & GODDARD, G. V.** Epileptic focus location: Spectral analysis method. *Science*, 169(3946):701-702, 1970.

A spectral analysis technique was used to locate the site of an epileptic focus during the ictal phase of an epileptic cat with permanently implanted electrodes in the brain. Epileptic seizures were induced by a daily 5-second electrical stimulation in the piriform cortex. Over a period of time, the response to this electrical stimulation was a full clonic-tonic seizure. Data were obtained from 6 simultaneous channels of activity taken from implanted bipolar electrodes during normal, ictal, and postictal activity. Three channels of data were examined at the same time, and pairwise coherence and partial coherence were systematically examined in each of the 20 distinct triples of data. The piriform cortex exclusively seemed to be driving the putamen, the reticular formation, and the nucleus lateralis posterior of the thalamus. It appeared to be the driving site of the epileptic focus. The autoregressive method of spectral analysis was used to perform spectral computations. (5 refs.) - *J. K. Wyatt.*

Stanford University Medical School
Stanford, California 94305

1147 **McWILLIAM, P. K. A.** Diazepam in status epilepticus. *Archives of Disease in Childhood*, 45(240):285, 1970. (Letter)

Paraldehyde is valuable in status epilepticus, but diazepam should be the first choice, since respiratory depression appears to occur more frequently when diazepam follows parenteral administration of a barbiturate. Despite the apparent efficacy of intramuscular diazepam, slow intravenous injection is preferable, because it can be quickly stopped if anything untoward occurs. (1 ref.) - *B. Berman.*

Pontefract General Infirmary
Pontefract, Yorkshire, England

1148 **FORMBY, DAVID J.** Diazepam in status epilepticus. *Archives of Disease in Childhood*, 45(240):285, 1970. (Letter)

Parenteral diazepam is effective in status epilepticus, but the intramuscular route is preferable to the intravenous, and the increasing use of the latter is deplorable, since it has caused a number of cases of respiratory depression (an infant with meningitis and convulsions died 10 minutes after such an injection). Diazepam should be used only in hospital practice, preferably intramuscularly, and only if full resuscitatory facilities are available. (1 ref.) - *B. Berman.*

Princess Margaret Hospital for Children
Perth, Western Australia, Australia

1149 **LUESSENHOP, ALFRED J.; DELA CRUZ, TEODORO C.; & FENICHEL, GERALD M.** Surgical disconnection of the cerebral hemispheres for intractable seizures: Results in infancy and childhood. *Journal of the American Medical Association*, 213(10):1630-1636, 1970.

Surgical cerebral disconnection has proved effective in controlling severe epileptic seizures in 3 children (ages 3, 3, and 7 yrs). Comparatively

simple and bloodless in infants and children, the midline commissurotomy (complete section of the corpus callosum and anterior commissure, plus unilateral fornix excision) was performed through a frontoparietal craniotomy along the midline, and was designed to protect one hemisphere from the continuous seizure bombardments in the other and still retain residual function in the damaged half. The same surgery was ineffective in a 4-month-old infant whose seizures (probably of bilateral origin) were not helped by surgery. A 17 to 36-month followup on the 3 children (whose seizures were primarily unilateral) showed that the surgery carried them through a critical period of life-threatening seizures. With greater application than hemispherectomy, the surgery (which produced no additional neurological deficit) requires testing for subtle deficits and should be restricted to clear-cut hemispheric lateralization. (17 refs.) - *B. Berman.*

Georgetown University Hospital
Washington, D. C.

1150 GRANT, RICHARD H. E.; & STORES, OLGA P. R. Folic acid in folate-deficient patients with epilepsy. *British Medical Journal*, 4(5736):644-648, 1970.

Folic acid has little or no effect on seizure frequency, speed of thought and action, personality, or behavior (except in isolated instances) in Ss with epilepsy. In a double-blind trial with 51 Ss (serum-acid levels below 3.6 ng/ml), 25 received folic acid and 26 received placebo. After treatment of at least 6 months, there were no significant differences in number or kinds of attacks or in cognitive functions (random-letters test and Wechsler IQ). On personality and behavior, the Eysenck-Withers Personality Inventory showed a statistically significant change ($p<.05$)—folic acid Ss had a mean increase of 1.32 on the neuroticism scale; placebo-treated Ss a mean decrease of 1.24; there was no meaningful difference on the extroversion and lie scales. Almost all Ss in both groups claimed, contrary to all evidence, "considerable" improvement in general condition and seizure frequency. Two patients (case histories provided) were particularly insistent about deriving great benefit. (18 refs.) - *B. Berman.*

David Lewis Colony
Alderley Edge, Cheshire, England

1151 ALLEN, C. D. Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 3(5722):585-586, 1970. (Letter)

In relation to correspondence (N. S. Gordon, July 25) pointing out the association of reduced serum folate and gradual mental decline in prolonged administration of anticonvulsants to children with epilepsy, animal studies have shown brain tissue can maintain normal folate activity in the presence of diphenylhydantoin (DPH) and reduced serum and cerebrospinal-fluid folate. Further, DPH-induced ataxia in cats and prolonged DPH administration to rats were not associated with significant changes in cerebral folate concentration. Maintenance of normal cerebral-folate activity in the presence of DPH suggests the latter's anticonvulsant property is not mediated through a change in cerebral-folate concentration. Folic-acid deficiency from maladsorption in MR and epilepsy has confirmed the importance of cerebral-transport mechanisms in maintaining cerebral-folate activity in man. (6 refs.) - *B. Berman.*

Royal United Hospital
Bath, England

1152 NEUBAUER, C. Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 4(5732):432, 1970. (Letter)

It is important in vitamin treatment of Ss with epilepsy to use both folic acid and vitamin B_{12}. In 50 cases so treated, a serum-folate level below 5 ng/ml was considered normal. With a dosage of folic acid at 15 ng/ml/day in Ss with lower levels and 10 mg in Ss with a level of 4-4.9 ng, serum-folate levels rose in all patients, but no association between these levels and mental improvement was detected. (1 ref.) - *B. Berman.*

No address

1153 REYNOLDS, E. H.; WRIGHTON, R. J.; PREECE, J. M., & JOHNSON, A. L. Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 4(3729):246-247, 1970. (Letter)

Current evidence suggests a strong association between various psychiatric diagnoses in Ss with epilepsy and disturbed folate and vitamin B_{12} metabolism, with a tendency for the lowest

folate levels in serum, red cells, and cerebral spinal fluid to occur along with intellectual deterioration (3 separate inborn errors of folate metabolism—all connected with MR—have been reported). Therapy requires use of both folic acid and vitamin B_{12} (serum vitamin-B_{12} levels generally drop during folic-acid treatment), but caution in their use is required pending further information. (10 refs.) - *B. Berman.*

Yale University Medical School
New Haven, Connecticut 06510

1154 **RALSTON, A. J.** Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 3(5724):707, 1970. (Letter)

Several questions are raised about Neubauer's conclusions on the efficacy of folic acid and vitamin B_{12} in preventing mental deterioration in Ss with epilepsy who are receiving anticonvulsants. Was there bias in selection of cases? At what more normal serum-folate levels could 44% of Ss have been maintained? What folic-acid doses were given to some of the patients? Did serum-folate levels rise in all 50 Ss, and was any association noted between those levels and the improved mental condition reported for 22 cases? (1 ref.) - *B. Berman.*

Oulton Hall Hospital
Leeds, York, England

1155 Gelastic epilepsy. *British Medical Journal*, 4(5734):511-512, 1970.

The term "gelastic epilepsy" was coined by Daly and Mulder to describe inappropriate attacks of laughter which are an integral part of the seizure pattern. One patient—with retinitis pigmentosa and repetitive attacks characterized by involuntary movements and short spells of high, cackling, monotonous laughter—showed little EEG electrical activity during the laughter periods, but these periods were interspersed with irregular, high-voltage, generalized slow-wave activity and spikes. Intravenous diazepam produced rapid and sustained improvement. There is substantial evidence that gelastic epilepsy has a hypothalamic origin. (14 refs.) - *B. Berman.*

1156 **NEUBAUER, C.** Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 3(5720):466, 1970. (Letter)

Improvement (from use of folate and vitamin B_{12} in epilepsy) in number and severity of seizures, behavior, and mental state was evaluated by a physician and nursing staff. In addition, data will be published on EEG changes corresponding to symptom changes. If serum-folate levels remain below 40 ng/ml (the apparent threshold for seizure precipitation in children), there will be no increase in number or severity of seizures following folic-acid administration. (2 refs.) - *B. Berman.*

Prudhoe Hospital
Prudhoe, Northumberland, England

1157 **NORRIS, J. W.** Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 4(5727):119, 1970. (Letter)

The alleged improvement in mental condition and worsening of seizures following folate administration is based largely on very scanty evidence. A controlled trial at the Montreal Neurological Institute showed that folic acid had no more effect on seizure incidence than placebos (1 S developed severe status epilepticus on placebos). More facts are urgently needed. (5 refs.) - *B. Berman.*

University of Toronto
Toronto, Ontario, Canada

1158 Folate and vitamin B_{12} in epilepsy. *British Medical Journal*, 2(5712):744-745, 1970.

Recent investigations by Neubauer, working with a group of 50 epileptic children, re-emphasize the need for reliable estimations of folic acid and vitamin B_{12} levels in epilepsy patients on prolonged anticonvulsant therapy, in order to detect any possible ill effects of treatment. Earlier studies show that some epileptics on a heavy dosage of anticonvulsants may steadily deteriorate in mental performance, both children already suffering brain damage and those of normal intelligence being vulnerable. Combinations of anticonvulsant drugs (such as primidone and pentobarbitone) are apparently even more damaging than long term single-drug administration. Even though the specific mechanism of the antagonism between vitamin B_{12} and folic acid is not completely understood, it is clear that both

need to be administered as soon as an epileptic patient is started on anticonvulsant drugs, in order to prevent mental deterioration. Dosage should not be determined empirically, but should be based on accurate measurement of the blood levels of these substances. (7 refs.) - *N. Mize.*

1159 Attack on epilepsy. *British Medical Journal,* 2(5700):2-3, 1970.

A joint subcommittee of the Standing Medical Advisory Committee and the Advisory Committee on Health and Welfare of Handicapped Persons was formed to review the medical, social, educational, employment, and welfare needs of epilepsy sufferers. The committee report suggests that patient referral initially be made by the family doctor to an expert team of consultants in neurology, neurosurgery, neuropsychiatry, psychiatry, pediatrics, and general medicine, with the additional services of a clinical psychologist and social worker available on demand. After full assessment and initiation of treatment, the family doctor would have responsibility for continuing care. Other recommendations cover the need for modernization of epilepsy colonies, and include a suggestion that these institutions function primarily as halfway houses. There is also a call for the establishment of special centers as part of neurological and neurosurgical units, with attached residential areas where the patient can be observed under ordinary living and working conditions, and with special training facilities for general practitioners. (4 refs.) - *N. Mize.*

1160 **MACLAY, D. T.** Epilepsy. *British Medical Journal,* 2(5705):366-367, 1970. (Letter)

Since many epileptic children recover completely from their disability or make substantial recovery, more attention should be paid to the emotional aspects of this illness. Social stigma and educational and occupational discrimination continue to follow the former epileptic long after actual recovery has occurred. It is essential that those who are going to recover or improve markedly and be able to maintain themselves be protected from publicity which may adversely affect their ability to secure employment for which they are qualified. (1 ref.) - *N. Mize.*

Uffculme Clinic
Birmingham 13, England

1161 **SMYTH, V. O. G.** Epilepsy – fact and fallacy. *Nursing Mirror,* 131(7):16-19, 1970.

The nature and symptoms of grand mal, petit mal, and temporal lobe epilepsy are outlined in this tutorial article. Other conditions whose symptoms may be mistaken for epilepsy include infantile convulsions, breath holding attacks, hyperventilation tetany, and faints. Common fallacies regarding epilepsy center around the role of convulsions, the effects of epilepsy on intelligence and mental well-being, the so-called "epileptic personality," and the management of drug therapy. Factors liable to cause epileptic attacks, restrictions on the activities of epileptic patients, and drug treatment are briefly covered. (3 refs.) - *J. C. Moody.*

Burden Neurological Institute
Bristol, England

1162 **SPAANS, F.** No effect of folic acid supplement on CSF folate and serum vitamin B_{12} in patients on anticonvulsants. *Epilepsia,* 11(4):403-411, 1970.

Long-term administration of folic acid to hospitalized epileptic patients on anticonvulsant medication causes an increase in serum folate to above-normal levels, but does not affect the cerebrospinal fluid (CSF) folate concentrations. In a placebo double blind experiment involving 62 epileptic patients (52 male, 10 female) divided into 2 groups and matched for age, sex, serum folate activity, antiepileptic medication, and maximal conduction velocity of the ulnar nerve, 3 x 5 mg of folic acid/patient/day was given to the 30 Ss in the experimental group. The control group received placebos. Antiepileptic medication was continued. Comparison of serum folate and vitamin B_{12} levels and of CSF folate levels measured at 3-4 weeks and after 3 months with those determined initially showed that in the experimental group mean serum folate levels rose from a pre-therapy level of 4.2 to above 30.0 ng/ml at 3-4 weeks and remained at the higher level. CSF folate levels tended to fall slightly, but this change was also observed in the placebo group. Fluctuations in mean serum vitamin B_{12} levels occurred in both groups; however, results indicate that folic acid administration did not influence vitamin B_{12} levels. (23 refs.) - *M. S. Fish.*

University of Amsterdam
Amsterdam, The Netherlands

1163 **MACKINTOSH, T. F.** Studies on prophylactic treatment of febrile convulsions in children: Is it feasible to inhibit attacks by giving drugs at the first sign of fever or infection? *Clinical Pediatrics*, 9(5):283-286, 1970.

In a study of 32 children aged 6 months to 5 years, it was determined that intermittent therapy with phenobarbitone and salicylates does not greatly reduce the chances of a child's having febrile convulsions after a first attack. The children had normal EEGs and no frank infection of the central nervous system or previous neurologic abnormality. Children having febrile convulsions were brought to the hospital; following tests, treatment and recovery, each mother was given treatment capsules containing sodium phenobarbitone (phenobarbital) and sodium salicylate; placebo capsules contained dextrose. Mothers were instructed to use the capsules if the children developed a temperature greater than 100° F or if there were signs of an infection. In the study, 31% of children receiving placebo had further convulsions, as against 19% receiving the medication. The difference is not significant, however. Apparently, it is not possible for the average parent to give drugs in time to prevent a febrile convulsion. (6 refs.) - *M-E. Sayre.*

University of Dundee
Dundee, Scotland

1164 **WILSON, P. J. E.** More 'second thoughts' on hemispherectomy in infantile hemiplegia. *Developmental Medicine and Child Neurology*, 12(6):799-800, 1970. (Annotation)

Longterm follow-up examination of cases of infantile hemiplegia, intractable epilepsy, and uncontrollable behavior disturbances which have been treated by hemispherectomy has provided information which might be helpful in resolving the wide diversity of opinion regarding the usefulness of this radical neurosurgical operation. The operative mortality of the procedure is low, and abolition or reduction of seizures occurs in 70 and 15%, respectively, of the cases. Behavior disorders improve in 90% of the Ss. While improvement in power does not occur for the hemiplegic, overall physical capacity often improves. Some sensory deficits may result. Intellectual function improves only marginally; however, deterioration may be prevented or reversed. Results are optimized by proper case selection. The high morbidity rate, principally due to delayed persistent chronic subdural hemorrhage (in 30-40% of the cases), can usually be successfully alleviated if a precise diagnosis is made. Products of the hemorrhage must be removed, and when a secondary hydrocephalus has resulted, a shunt can be applied for correction. Glucocorticoids can minimize the leptomeningeal reaction to blood breakdown products. (7 refs.) - *M. S. Fish.*

Morriston Hospital
Morriston, Swansea, SA6 6NL, Wales

1165 **GRANT, D. N.** Neurological manifestations associated with the internal carotid artery. *Developmental Medicine and Child Neurology*, 12(6):797-799, 1970. (Annotation)

Although studies of Ss with neurological manifestations associated with irregularities of the internal carotid artery have resulted in recommendations that surgical correction be considered, that approach has not yet been undertaken for these particular Ss. The rarity of the condition, and the need for operating during the acute phase in order for the approach to be effective, have made surgical management difficult in the past. Of a group of 15 children with hemiplegia, 10 had a variety of abnormalities of the internal carotid artery as disclosed by arteriography. In another group of 114 children with acute hemiplegia, arteriograms disclosed that 20 had lesions of this artery. More than one-half of a group of 9 children with cerebrovascular insufficiency became MR. Bilateral carotid arteriography showed that the patients had either unilateral or bilateral carotid artery loops or kinks. Studies of another large group of adults and children disclosed that tortuosity and coiling of the carotid artery is a congenital developmental abnormality. In patients of this type, 4-vessel angiography using catheterization and examination of the regional cerebral flow using radio-active isotopes might provide additional information on cerebral blood flow and on the correlation of this abnormality with the ischemic signs and symptoms. (4 refs.) - *M. S. Fish.*

The Hospital for Sick Children
and the Institute of Child Health
London, W.C.1, England

MEDICAL ASPECTS - Chromosomal

1166 CHRISTENSEN, M. FJORD; & THERKELSEN, A. J. A case of XXXXY chromosome anomaly with four maternal X chromosomes and diabetic glucose tolerance. *Acta Paediatrica Scandinavica,* 59(6):706-710, 1970.

A 2½-year-old boy (with a diabetic glucose-tolerance test) is the fourth reported case of a 49,XXXXY chromosomal anomaly in which the Xg blood-type investigation in S and parents revealed developmental information. Thought at first to have Down's syndrome, the S presented poor physical growth, hypogenitalism, mongoloid features, and MR (IQ 35) and was the second of twins born to healthy, unrelated parents. There were no signs of heart disease, and hearing and vision were normal. The Xg blood-type determination showed the X chromosomes to be of maternal origin, suggesting a non-disjunction twice during meiosis. The diabetic-glucose tolerance (not before reported in these cases) was surprising, since it is frequent in Klinefelter's syndrome, with which the present case had much in common. (20 refs.) - *B. Berman.*

Kommunehospitalet
Aarhus C, Denmark

1167 Down's syndrome: Altered carbohydrate metabolism found in parents—diminished tooth size observed in mongoloids. *Tufts Health Science Review,* 1(2):18-19, 1970.

Of 42 parents of 34 Down's syndrome children, 19.1% showed chemical diabetes. Half the parents had a family history of diabetes (in contrast to an anticipated 11.5% incidence for the general U. S. population). Over one-third of these relatively young parents presented some glucose-tolerance abnormality. This and other evidence suggests a connection between parental and familial diabetes and a predisposition to chromosomal abnormalities. In another study, measurements of the mesiodistal crown diameters of permanent teeth in 50 Down's syndrome Ss (ages 16-36 yrs) showed 27 Ss with mean measurements well below normal. This suggests that the chromosomal aberration in Down's syndrome affects tooth size and irregularities. (1 ref.) - *B. Berman.*

1168 HALL, BERTIL. Somatic deviations in newborn and older mongoloid children. *Acta Paediatrica Scandinavica,* 59(2):199-204, 1970.

All Down's syndrome children (N=38) born in southern Sweden during a one-year period were followed for up to 6 years. Fifteen died before the age of 6 months and 12 of these (plus 2 survivors) had cardiac malformations. Average maternal age was 34.7 years. During the newborn period pallor, hypotonia, pasty skin, abundant neck skin, hyperflexibility, oblique palpebral fissures, round head, protruding tongue, dysplastic middle phalanx of little finger, and pelvic dysplasia were prominent. By age 6, only hyperflexibility remained, and the pelvic dysplasia was more prominent. A flat occiput, short stature, MR, and abnormal speech were now apparent. In addition to the karyotype, there are sufficient clinical signs in the newborn to make the diagnosis of Down's syndrome. (10 refs.) - *E. L. Rowan.*

Lund Universitet
Lund, Sweden

1169 CASTEELS-van DAELE, MARIE; PROESMANS, W.; van den BERGHE, H; & VERRESEN, H. Down's anomaly (21 trisomy) and Turner's syndrome (46,XXqi) in the same sibship. *Helvetica Paediatrica Acta,* 25(4):412-420, 1970.

The 3 living siblings in a family consist of a boy with Down's syndrome, a girl with Turner's syndrome, and a normal-looking boy with low intelligence. The boy with Down's syndrome has a 47XY,G+ karyotype and is severely MR. The girl shows a 46,XXqi karyotype and appears rather normal. She does have essential hypertension and dermatological findings of dystrophic nails and alopecia areata. This is the fourth

reported family with both anomalies, but more work is necessary to determine their relation, if any. (14 refs.) - *E. L. Rowan.*

Academisch Ziekenhuis St. Raefael
Leuven, Belgium

1170 **WARBURTON, DOROTHY.** Risk of Down's syndrome. *New England Journal of Medicine,* 283(4):212-213, 1970. (Letter)

There is no evidence to support the hypothesis that the risk of recurrence of Down's syndrome for women who have born a child with 21-trisomy is about twice the general risk for women of similar age. This risk figure was derived from data in which the chromosomal status of the mother and the child with Down's syndrome were not known. The only available estimate of the risk of recurrence of 21-trisomy suggests that there is a somewhat increased risk for recurrence, which may be less than twice the general risk for older mothers and greater than this for young mothers. (6 refs.) - *J. K. Wyatt.*

Columbia University College of
Physicians and Surgeons
New York, New York 10032

1171 **HAEFFLER, GOSTA; & *HALL, BERTIL.** A dysplastic girl with an inherited partial C trisomy. *Acta Obstetricia et Gynecologica Scandinavica,* 49(4):311-314, 1970.

A case of a 14-year-old dysplastic girl with a partial C trisomy apparently presents (since mother and brother are phenotypically normal) a reciprocal interchange of unequal portions of arms between 2 group-C chromosomes. Sex chromatins of the S and relatives are all normal. The S's phenotype is not identical to that of other partial C trisomies. Hospitalized because of MR, the S has parents who are physically and mentally normal (no consanguinity), but the mother has had 5 spontaneous abortions. The S, at birth, had a weak cry, peculiar face, and dysplastic ears and showed retardation during the first year of life. The frequent familial abortions are in agreement with previous findings. (11 refs.) - *B. Berman.*

*University of Lund
Lund, Sweden

1172 **DAHL, GUDRUN.** Chromosomal conditions in congenital heart disease. *Acta Paediatrica Scandinavica,* 59(1):65-73, 1970.

Studies of chromosomal abnormalities (particularly of size variations) in 100 Ss with congenital cardiovascular disease showed no relation between the abnormalities and the disease, where the latter was not associated with known syndromes or severe extra-cardiac malfunctions. In 82 Ss, there were no major chromosomal aberrations. The analysis showed a modal number of 46 and normal karyotypes. Eighteen Ss showed definite abnormalities: 12 with phenotypic Down's syndrome, all with trisomy-G with mosaicism. Four showed a clinical picture of Turner's syndrome and were all sex-chromatin negative with a karyotype 45/XO without mosaicism. Two presented unusual karyotypes: isochromosomy or pericentric Y chromosomal inversion; and partial trisomy of a group C chromosome and translocation C/D. (14 refs.) - *B. Berman.*

Queen Louise's Children's Hospital
Copenhagen, Denmark

1173 **KOULISCHER, LUCIEN.** Recent information concerning the origin of mongolism. *Qawwi Qalbek,* 10:21-25, 1970.

Mongolism, or Down's syndrome (DS), is a disease of chromosomal aberration (47 chromosomes), the additional chromosome (a result of meiotic non-dysjunction) being number 21, which is represented three times instead of twice (21-trisomy). The risk of DS (about 1 in 700) increases with maternal age (from 1/2000 for ages 20-24 to 1/50 for those >40), but varies with parental chromosomal make-up. About 5% of DS Ss reveal a "mosaic"—a combination of an abnormal 21-trisomy line and a normal 46-chromosome line. Individuals with normal appearance may be carriers of a mosaic, with high risk of having DS children (chiefly young mothers below 30). Translocations (a fixation of a 21-chromosome to another—most frequently 13-15, or 21-22) are carried by 2 to 4% of Ss with DS. Normal parents carrying a translocation have a risk of DS in 1 of 3 living births. Normal siblings of trisomy-21 Ss run no greater risk of having offspring with Down's syndrome than any other individuals of the same age. (No refs.) - *B. Berman.*

No address

1174 **COUVENT, G.; VLIETINCK, R.; & ORYE, E.** Familiaal Turner fenotype met direkte overdracht (Familial Turner phenotype with direct transmission). *Acta Paediatrica Belgica*, 24(2):91-96, 1970.

A 10-year-old girl was found to have a direct transmission of Turner stigmata from her mother. The chromosomes in both were normal and consistent with their female appearance. Dermatoglyphics revealed a low total finger ridge count as noted in other cases of familial Turner phenotype with direct transmission. Patients with Turner-like appearance should be differentially diagnosed from those with the classical XO Turner syndrome. A distinction in the phenotype can be made by the total finger ridge count, the kind of associated congenital malformations, and the mode of inheritance. (3 refs.) - *G. Van Massenhove.*

Rijksuniversiteit-Gent
B-9000 Gent, Belgium

1175 **CAO, ANTONIO: FALORNI, A.; & De VIRGILIS, S.** G.-6-P.D. deficiency and Down's syndrome. *Lancet*, 1(7647):621, 1970. (Letter)

Blood examinations for 38 children (ages 1 day to 17 years) with Down's syndrome revealed no relation between the syndrome and glucose-6-phosphate dehydrogenase (G-6-PD) deficiency. Ss who were homozygous for G-6-PD deficiency showed no erythrocyte G-6-PD activity; those who were heterozygous for the deficiency showed considerable variation in the expression of the deficiency. The factors causing the deficiency are not the same as those causing the increase in trisomy-21. (8 refs.) - *B. Berman.*

University Pediatrics Clinic
Perugia, Italy

1176 **DOXIADIS, S.; PANTELAKIS, S.; & VALAES, T.** Down's syndrome and infectious hepatitis. *Lancet*, 1(7652):897, 1970. (Letter)

A 2-year study of 10,412 liveborn infants showed that mothers with clinical infectious hepatitis preceding pregnancy had a 3-times greater risk of bearing a child with Down's syndrome than mothers without such a history. These findings and those of other researchers point to a relation between maternal infectious hepatitis and Down's syndrome in the child. (2 refs.) - *B. Berman.*

Institute of Child Health
Athens, Greece

1177 **HO, KANG-JEY; & CHANG, S. H.** Mosaic Turner's syndrome with unusual manifestations. *Journal of the American Medical Association*, 213(10):1688-1689, 1970. (Letter)

A case is cited of Turner's syndrome with mosaic chromosomal aberrations, normal ovaries (this is unusual), and 2 never previously reported manifestations: multiple cardiac anomalies and partial situs inversus. Born to a 31-year-old gravida 7, para 2, the infant showed an enlarged heart and complete heart block; despite digitalis and positive-pressure oxygen, the infant died in 8 hours. An XO karyotype of peripheral-blood cells and variable visceral sex-chromatin counts indicated a possible XX/XO mosaic. It is not known whether the partial situs inversus was due to chromosomal aberration. (9 refs.) - *B. Berman.*

No address

1178 **HENCHMAN, D. C.; GREY, JULIENNE; CAMPBELL, J. B.; & NANCE, SUE.** Klinefelter's syndrome with mosaicism trisomy-18. *Australian Paediatric Journal*, 6(3):142-145, 1970.

The first reported case in Australia of Klinefelter's syndrome with mosaicism trisomy-18 was born at full term in a normal pregnancy. An hour after birth, he was flaccid and not breathing well. The eyes were wide-set with folds beneath them, the ears were projecting and low-set, and the fingers had various anomalies. In a few days, he was limp, would not suck, and showed no primitive reflexes. Later, there were systolic murmurs, cyanotic attacks, and ventricular hypertrophy. Death came suddenly. Cell analysis showed some with 47 and some with 48 chromosomes. In the cells with 47 chromosomes, the additional chromosome was in the C group and presumed to be an X, since a buccal smear showed a positive chromatin pattern in 25% of

the cells; thus, the karyotype was interpreted as XXY. The cells with 48 chromosomes showed another chromosome indistinguishable from a number 18. Mosaics of this type may often be missed if only a small number of cells are analyzed. Both parents had normal karyotypes, with sex-chromatin patterns consonant with phenotype. (10 refs.) - *B. Berman.*

Canberra Hospital
Canberra City, Australia Central Territory
Australia

1179 **BAKER, DAVID; TELFER, MARY A.; RICHARDSON, CLAUDE E.; & CLARK, GERALD R.** Chromosome errors in men with antisocial behavior: Comparison of selected men with Klinefelter's syndrome and XYY chromosome pattern. *Journal of the American Medical Association*, 214(5):869-878, 1970.

Cytogenetic screening of 876 males in prisons and institutions for the mentally aberrant yielded 9 individuals with 47,XYY karyotype and 14 with Klinefelter's syndrome (identified by buccal smear and confirmed by subsequent chromosomal analysis of venous-blood specimens). Comparative histories of seven 47,XYY and 8 Klinefelter Ss revealed a wide variety of psychotic, psychopathologic and criminal behavior; all had tall stature and elongated lower segments (the XYY group being 3 inches taller on average), and frequent occurrence of acne, leg ulcerations, and neurological abnormalities. The Klinefelter group, however, showed uniformly atrophic testes and positive sex chromatin. Mean IQ was 84 for the XYY group and 80 for the other group. An extra X chromosome in males is most tangibly associated with testicular atrophy and mild MR. The high incidence of Klinefelter cases among the criminally insane was not anticipated; however, rigorous proof of association between chromosomal disorders and antisocial behavior requires wide-scale chromosomal screening of the normal population. (23 refs.) - *B. Berman.*

Elwyn Institute
Elwyn, Pennsylvania 19063

1180 **SUMI, S. MARK.** Brain malformations in the trisomy 18 syndrome. *Brain*, 93(4):821-830, 1970.

Neuropathological abnormalities were noted in 6 infants with cytogenetically documented trisomy 18. In 4, the brain was generally small with a small cerebellum noted in 3. The anterior commissure was absent in 2 cases and hypoplastic in a third. Four showed hippocampal abnormalities particularly in the dentate gyrus. The inferior olivary nucleus was abnormal in all cases and 4 showed a thickened dorsal lip and 3 a "neuronal capsule". There was heterotopia of large neurones of the cerebellum in 3 cases. The corpus callosum was hypoplastic in 2 cases and absent in a third. As with other abnormalities in the trisomy 18 syndrome, none of the cerebral anomalies alone or in combination is diagnostic of this particular chromosomal syndrome. (25 refs.) - *E. L. Rowan.*

University of Washington, School of Medicine
Seattle, Washington 98105

1181 **McMILLAN, CAMPBELL W.** Mongolism and anemia. *Clinical Pediatrics*, 9(9):553-554, 1970.

A 16-year-old boy with Down's syndrome had megaloblastic anemia and a craving for peanut butter. He had a history of vomiting and abdominal pain and in the previous 3½ years had a Wineberg pyloroplasty and duodenoplasty, a gastroenterostomy, and repair of gastroenterostomy. Progressive anemia began one month after the final operation and was not corrected by iron therapy. Megaloblastic anemia was apparently due to folic-acid or vitamin B_{12} deficiency. Treatment included parenteral vitamin B_{12}, transfusion with 250 ml of packed erythrocytes, and folic acid. Blood counts have remained normal on a continued program of 5 mg folic acid/day orally. This is the third case of megaloblastic anemia in which a craving for peanut butter was observed. (No refs.) - *J. K. Wyatt.*

University of North Carolina Medical Center
Chapel Hill, North Carolina

1182 **SPARKES, ROBERT S.; & DE CHIERI, PRIMAROSA R.** Inherited 13/14 chromosome translocation as a cause of human fetal wastage. *Obstetrics and Gynecology*, 35(4):601-607, 1970.

A 30-year-old female who had recurrent abortions has demonstrated that chromosome translocation may be an important cause of fetal wastage in some families. In 8 pregnancies, the S produced 1 viable son, 3 deformed, stillborn infants, and 4 aborted fetuses. The health of the S and her husband appeared essentially good. Cytological examination of the S and available kindred revealed a D/D chromosomal translocation (45,D-,D-,t(DqDq)) for the S, her son, father, 2 brothers, and 4 nephews. The husband, mother, 1 sister (with no children), and a niece did not have the translocation; one brother was not studied, and information on the father's family was not available. Autoradiographic chromosome studies of the son and a nephew indicated that the translocation involved chromosomes 13 and 14. The S is the only identified female carrier of the translocation in the family. Although chromosomal abnormalities occur in a significant proportion of spontaneous abortions, translocations in affected abortuses are infrequent. When they do occur, however, other studies, along with the present one, indicate that they frequently are D/D translocations and are usually found in the female partner. (30 refs.) - *M. S. Fish.*

UCLA School of Medicine
Los Angeles, California 90024

1183 **PERGAMENT, EUGENE; PIETRA, GIUSEPPE C.; KADOTANI, TETSUJI; SATO, HIDEO; & BERLOW, STANLEY.** A ring chromosome No. 16 in an infant with primary hypoparathyroidism. *Journal of Pediatrics,* 76(5):745-751, 1970.

A case of hypoparathyroidism associated with a ring chromosome No. 16 (the first reported case) was diagnosed in a 4½-month-old male infant with clinical features of hypertelorism, epicanthic folds, beak-shaped nose, high-arched palate, low-set ears with slit-like openings of the external auditory canal, bilateral cryptorchidism, and bilateral displacement of the fifth toe. Chromosomal analysis revealed 4 different cell populations associated with No. 16 chromosome: cells with ring chromosome No. 16; cells with 45 chromosomes and monosomic for all genes on chromosome No. 16; cells with double-sized rings, likely trisomic for chromosome No. 16; and tetraploid cells with and without ring chromosome No. 16. Persistent hypocalcemia and hyperphosphatemia in the absence of renal insufficiency, steatorrhea, and rickets in the S suggested hypoparathyroidism; however, the anomalies of the first and second arches and the presence of hypoplastic aberrant parathyroids suggested that the S did not belong in the usual groups of early sporadic primary hypoparathyroidism. The deleted portions of chromosome No. 16 did not contain the loci of the heptoglobin, Kell, Duffy, and Rh blood group systems as indicated by typing of blood, serum, and red blood cell enzymes for 12 autosomal marker systems in the proband, parents, and 3 female sibs. (18 refs.) - *M. S. Fish.*

Michael Reese Hospital
Chicago, Illinois 60616

1184 **FERRIER, PIERRE E.; FERRIER, SIMONE A.; & KELLEY, VINCENT C.** Sex chromosome mosaicism in disorders of sexual differentiation: Incidence in various tissues. *Journal of Pediatrics,* 76(5):739-744, 1970.

Except when clinical findings do not correlate with cytogenetic data in leukocyte cultures, study of fibroblast cultures may not be necessary in the examination of cases of Turner's syndrome, pseudohermaphroditism, and Klinefelter's syndrome. Of a group of 43 Ss (31 phenotypic females with Turner's syndrome, 8 male pseudohermaphrodites, and 4 males with Klinefelter's syndrome), cytogenetic data from cells from various tissues revealed that 21 of the Ss with Turner's syndrome had 45,X chromosomal constitution without mosaicism; the other 10 had mosaicism as follows: 2 with 45,X/46,XX; 3 with 45,X/46XXqi; 1 with 46,XX/46XXqi; 1 with 45,X/45,XX/45XXqi; 1 with 45,X/46,XX/47,XXX; 1 with 45,X/46,XX/47,XXr; and 1 with 45,X/46,XXr. Six of the 8 pseudohermaphrodites had mosaicism, all involving the XO cell line. No mosaicism was observed in the 4 Ss with Klinefelter's syndrome. In only 1 instance (Turner's syndrome) was mosaicism detected in skin fibroblasts but undiscovered in leukocyte cultures. While the findings of mosaicism correlate well with those of other investigators, they tend to refute other claims that cells from multiple tissues must be examined if the majority of cases of sex chromosome mosaicism are to be identified. (18 refs.) - *M. S. Fish.*

University of Washington School of Medicine
Seattle, Washington 98105

1185 **WEINBERGER, MILES M.; & OLEINICK, ARTHUR.** Congenital marrow dysfunction in Down's syndrome. *Journal of Pediatrics,* 77(2):273-279, 1970.

An extensive congenital defect of bone marrow function may exist in newborn infants with Down's syndrome. The study population was 418 polycythemic infants (drawn from 44,683 for whom hematocrit values were available), 402 of whom were matched with controls. Of this group of infants, 9 (2.2%) of the experimental group and none of the controls had Down's syndrome. Occurrence of the disorder was thus 19.2 times greater than that expected on a random basis. Of 61 live-born infants with Down's syndrome, 9 (15%) were polycythemic, compared with less than 1% of live-born infants without Down's syndrome. Red cell proliferation in Down's syndrome appears to be analogous to granulocyte and platelet abnormalities. Experimental work has suggested 2 possible mechanisms for the marrow disorders in Down's syndrome: marrow precursor cells may be abnormally sensitive to exogenous stimulation as indicated by transformation studies utilizing SV40 virus; and an excess of an endogenous humoral factor that stimulates proliferation of marrow elements may be present in infants with Down's syndrome. (27 refs.) - *M. S. Fish.*

National Jewish Hospital and Research Center
Denver, Colorado 80206

1186 **RUVALCABA, R. H. A.** Deletion of chromosome group E and thyroid autoimmunity. *Journal of Pediatrics,* 77(2):343-344, 1970. (Letter)

A recently reported case of an 18-year-female with deletion of the short arm from a chromosome of pair No. 18 and with no detectable IgA immunoglobin in serum or saliva was found, one year later, to have symptoms of thyroiditis as indicated by a painful goiter, thyroxin concentration, and ^{131}I uptake tests. In addition, the titer for antithyroglobulin antibody was 1:27 by tanned red cells, and the titer by the immunofluorescent test for antimicrosomal antibodies was 1:100. The observation raises questions regarding the frequency of association of thyroid autoimmunity with this particular chromosomal deletion, the nature of the relation between the chromosomal disorder and the abnormal tests for thyroid antibodies and the immunoelectrophoretic findings, and the association of the increased antibody titer with the immunoelectrophoretic anomaly. (3 refs.) - *M. S. Fish.*

University of Washington School of Medicine
Seattle, Washington 98105

1187 **GARDNER, LYTT I.** Pseudo-pseudohypoparathyroidism due to unequal crossing- over? *Lancet,* 2(7678):879-880, 1970. (Letter)

Two girls (CA 8½ and 17 yrs) with monosomy X and pseudo-pseudohypoparathyroidism (PPH) bring the total reported cases with both findings to 9 and suggest that the relationship is more than coincidental. The phenotypic appearance of PPH includes round-faced obesity, strabismus, shortened metacarpals, and pigmented lesions of the lower extremities. Similarities to Turner's syndrome and familial brachymetacarpalia suggest that genes controlling these manifestations are located on the pairing segment of the short arms of the X chromosome. It is suggested that the mechanism of abnormality is an unequal crossing-over of genes between these pairing segments. (10 refs.) - *E. L. Rowan.*

State University of New York
Upstate Medical Center
Syracuse, New York 13210

1188 **MATSANIOTIS, N.; TSENGHI, CHRISTINE; METAXOTOU-STAVRIDAKI, CATHERINE; ECONOMOU-MAVROU, CLEOPATRA; & BILALIS, P.** The XYY syndrome in young Greek detainees. *Helvetica Paediatrica Acta,* 25(3):253-257, 1970.

The karyotypes of 139 detainees, all of whom had criminal records, and 31 mental patients were examined in a search for XYY males to test the hypothesis that the XYY constitution is associated with tallness and aggressive antisocial behavior. Ss were selected on the basis of antisocial behavior and not because of tallness or MR. Two detainees had XYY sex chromosome constitution; one had XXY constitution. All three were free of clinical abnormalities and had average intelligence. No chromosomal subnormality was found among the mental patients.

The findings of this study, together with the findings reported by others, suggest that, although an extra Y chromosome is a factor definitely predisposing to criminal behavior, it probably carries no more weight than other (as yet undetermined) genetic and/or environmental factors. (16 refs.) - *Journal abstract, edited.*

Athens University
Athens, Greece

1189 **CHOISEL, G.; PARENT, J.-P.; & BIEDER, J.** Syndrome XXX: A propos d'un cas (XXX syndrome: Comments on a case). *Annales Medico-Psychologiques*, 128, part 1(5):765-771, 1970.

The systematic study of chromatin and dermatoglyphics in 275 patients has enabled us to discover 2 cases of XXX syndrome among the women hospitalized in a psychiatric ward. One of these cases, hospitalized at the age of 14 years, was admitted for MR combined with "sexual precocity." Her present age is 44 years; she has had only short leaves from the hospital since 1961. The karyotype obtained from blood cultures was a 47,XXX. The dermatoglyphic symptoms are described in detail. Dorsal scoliosis and coxa vara were noted. The IQ ranged from 30 to 37. This syndrome requires considerable additional study from the points of view of genetics, endocrinology, and psychology. (31 refs.) - *K. Baer.*

Hopital Psychiatrique de Bailliel
Bailliel, France

1190 **NOEL, B.; & QUACK, BERNADETTE.** Petit metacentrique surnumeraire chez un polymalforme (Small metacentric extra chromosome in a case of multiple malformation). *Journal de Genetique Humaine*, 18(1):45-55, 1970.

The case of a 21-year old male suffering from urinary tract malformation, renal atrophy, and colobomata and presenting a small (extra G) supernumerary metacentric chromosome is discussed. A review of the recent literature covering the syndromes associated with the presence of a supernumerary submetacentric chromosome is presented. These syndromes generally are characterised by colobomata, urinary tract malformation, anal atresia, pre-auricular fistulae, moderate MR, and possibly by biochemical changes such as a considerable reduction in the rate of leukocytic peroxidases. The extra chromosome may represent a partial trisomy. (14 refs.) - *K. Baer.*

No address

1191 **GODINOVA, A. M.; & VERLINSKAIA, D. K.** Elektricheskaia aktivnost' mozga pri sindrome Shereshevskogo-Ternera i mozaitsizme (Electroencephalographic activity in the Shereshevskii-Turner syndrome and in mosaicism). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova*, 70(6):873-879, 1970.

The chromosomal aberration manifested in the Shereshevskii-Turner syndrome is characterized not only by somatic disorders but also by changes in EEG activity. EEGs were taken from 34 patients with the syndrome, 3 of whom manifested a slight degree of debility. The first group consisted of 21 patients (CA range 14 to 16 yrs and older) and included 3 patients with mosaicism. Electrical activity in the first groups under conditions of rest and functional load stimulation differed essentially from EEG findings in healthy children and was characterized by greater heterotypicity of curves as compared with the second group. Electrical activity of patients with mosaicism shared many common indicators with the activity of patients with the Shereshevskii-Turner syndrome, although α-rhythm was dominant here. In younger age groups, deviations in the form of lags in CA development of cortical rhythms were observed. Rhythms of low amplitude, dominance of frequent vascillations, and disorganization of basic rhythms were found to increase with CA. The described EEG peculiarities in patients with the syndrome were probably evoked by immaturity of certain brain formations, a condition that can be interpreted as a particular manifestation of general somatic disturbances. (8 refs.) - *B. J. Grylack.*

Laboratory of Medical Genetics of the
Academy of Medical Sciences
Leningrad, Union of Soviet Socialist Republics

1192 **KUGEL, ROBERT B.** Combatting retardation in infants with Down's syndrome. *Children*, 17(5):188-192, 1970.

Psychomotor development of 7 very young children with Down's syndrome was observed for 18 months in an institutional setting which had the additional features of a homelike atmosphere, sufficient staff members to enable each child to have a staff substitute mother, and continuous stimulating and physically strengthening exercises. Two children (CA 4 and 17 mos) had retarded psychological and physical development but no other physical impairments. The special attention and stimulating experiences combined with rewards of smiles and praise to a child for his activities raised these children to a higher degree of sociability and adaptability than had been observed in children of the same ages with Down's syndrome who were confined to the State home. Towards the end of the program, the children were functioning at age level in gross motor activities and were only slightly below the norm for their CA in fine motor activities. For most of the children, adaptive behavior and even language development were appropriate for their age. The majority had developed some self-help skill in feeding and dressing and some were beginning to show limited progress in toilet training. It is evident that a hospital routine can be changed to support fully the development of young children and that retarded children will develop better if they are provided with appropriate stimulation for their age. (10 refs.) - *B. J. Grylack.*

University of Nebraska College of Medicine
Lincoln, Nebraska 68105

1193 **BARAKAT, BASSAM Y.; & JONES, HOWARD W.** Gynecologic and cytogenetic aspects of gonadal agenesis and dysgenesis. *Obstetrics and Gynecology*, 36(3):368-372, 1970.

The most frequent genetic abnormality in patients with gonadal dysgenesis is 45,X/46,XX mosaicism. Karyotypic studies of the peripheral blood of 26 patients with gonadal agenesis or dysgenesis revealed that 3 had a 45,X chromosomal complement; 7 had 45,X/46,XX; 6 had a Y chromosome; 3 had 46,XX; 4 had 1 abnormal X chromosome; and 3 had triple mosaics. Correlation of these findings with clinical observations showed that short stature was associated with monosomy for the short arm of the X chromosome. All patients with more than one X chromosome had a positive buccal smear; however, sex chromatin count did not correspond well with differential sex chromosome count from cultures of the lymphocytes, particularly in the presence of mosaicism. Management of these patients consists of estrogen replacement and, under certain circumstances, surgical exploration. (5 refs.) - *M. S. Fish.*

Johns Hopkins University School of Medicine
Baltimore, Maryland 21205

1194 **VOIGT, J. C.** Apparent fetal distress in trisomy E syndrome: Report of 2 cases. *Obstetrics and Gynecology*, 36(1):44-48, 1970.

A study of 2 cases suggests that apparent fetal distress, smallness for gestational age, and abnormal heart rate may indicate the presence in the fetus of an abnormality such as trisomy E. Both malformed infants who died during the neonatal period had abnormal heart rates during pregnancy and had clinical and autopsy features characteristic of E(16-18) trisomy. Chromosomal analyses confirmed the diagnosis in 1 infant although heart lesions, almost invariably present in cases of trisomy E, were not found in this particular case; however, the fetal heart rate had been abnormally slow for 2 weeks prior to labor. The heart rate was variable, irregular, and low for the other fetus just prior to delivery. These findings of abnormal heart rates suggest a relation to an abnormality, but whether the effect is central or local is unknown. (6 refs.) - *M. S. Fish.*

Royal Free Hospital
London WC 1, England

1195 **CURRAN, JOHN P.; AL-SALIHI, FAROUK L.; & ALLDERDICE, P. W.** Partial deletion of the long arm of chromosome E-18. *Pediatrics*, 46(5):721-729, 1970.

A 3-year, 10-month old male with partial deletion of the long arm of chromosome E-18 had many of the typical features of the abnormality (growth and developmental retardation, mid-face dysplasia, ear anomalies, and carp mouth); however, the genitalia were normal, whereas previously described males with this disorder had cryptorchidism or a penis abnormality. The S also had ankylosis in extension of both knees, palatal pigmentation, and an extra thoracic vertebrum — a combination also not reported previously. Karyotypic analysis of cultured leukocytes

showed partial deletion of the long arm of an E-group chromosome, identified as a No. 18 (46,XY,Eq-). The unusually narrow ear canals and the presence of digital whorls observed for the S lend support to other phenotypic studies of patients with an 18q- or 18r chromosome which suggest that the genetic loci influencing the development of ear canals and digital whorls are located near the ends of the long arms. (19 refs.) - *M. S. Fish.*

Medical Center, Baldwin Avenue
Jersey City, New Jersey 07304

1196 **HABERLAND, CATHERINE.** Alzheimer's disease in Down syndrome: Clinical-neuropathological observations. *Acta Neurologica et Psychiatrica Belgica,* 69(6):369-380, 1969.

Ss with Down's syndrome may be particularly disposed to metabolic and biochemical abnormalities which can lead to senile plaques and amyloid angiopathy. Histopathological features of presenile dementia (Alzheimer's disease) have been observed in 6 (4 female and 2 male) of a group of 38 Ss with Down's syndrome, ranging in age from 34 to 74 years at the time of death. Of the 6, 3 developed epilepsy accompanied by a behavior disorder in 1 and personality changes in another. The degree of gross atrophy and the severity of senile plaques appeared to be age-related. Amyloid angiopathy was moderate to mild in 4 cases; in the other 2, a large number of blood vessels in the leptomeninges, cerebral cortex, and plexus were infiltrated with amyloid. Alzheimer's fibrillary degeneration was present in the 3 oldest Ss who also had cortical neuronal loss. Four Ss had mineral deposits. The pathogenesis of Alzheimer's disease in a S with Down's syndrome is open to question. Whether the association is related directly to the chromosomal abnormality or indirectly to the biochemical anomalies is unknown. (19 refs.) - *M. S. Fish.*

Illinois State Psychiatric Institute
1601 West Taylor Street
Chicago, Illinois 60612

1197 **FORSSMAN, HANS.** The mental implications of sex chromosome aberrations. *British Journal of Psychiatry,* 111(539):353-363, 1970.

Chromosomal aberrations increase the risk of social maladjustment. This finding must be considered along with purely environmental explanations of deviant behavior. Males with extra X chromosomes show a greater liability than the standard population for MR and disease, epilepsy, and antisocial behavior; females with extra X's show a similar liability for MR and disease. The average percentage of males born with at least one too many X chromosomes is 0.17%. About one-third of all sex-chromatin-positive males are XY/XXY mosaics. Positive sex chromatin is more common among MRs than in the standard population, and the larger the excess number of chromosomes, the more severe the retardation. Among Ss with schizophrenia, 3 sex-chromatin-positive males in mental hospitals for every case in the standard population. Among Ss with epilepsy, the occurrence is 4 times that in the standard population. Little is yet known about the prevalence of the double-Y state in the standard population, and it is not yet clear whether extra Y's affect intelligence. Double-Y men are more prone to mental disease and criminal behavior. In a study of 119 inmates of a hospital for dangerous, mentally ill men, one-third of those over 6 feet tall had double-Y chromosomes. Cases of chromosomal aberration, although fairly rare, require the rethinking of the etiology of social maladjustment. (63 refs.) - *B. Berman.*

University of Goteberg
Goteberg, Sweden

1198 **NIELSEN, J.; BJARNASON, S.; FRIEDRICH, U.; FROLAND, A.; HANSEN, VIGGO H.; & SORENSEN, A.** Klinefelter's syndrome in children. *Journal of Child Psychology and Psychiatry,* 11(2):109-119, 1970.

Genetic, sociologic, and psychologic data are presented concerning 11 boys with Klinefelter's syndrome. Most of these boys demonstrated better performance function than verbal function during intelligence testing; the IQ ranged from 81 to 107. The proper diagnosis was often not made at first. All of these patients were sex-chromatin positive; 9 had the karyotype 47,XXY, and 2 had the sex chromosome mosaic 46,XY/47,XXY. All other siblings of these patients had no behavioral problems. Typically, these patients had a history of maternal dependence, immaturity, poor relations with other children, passivity, lack

of initiative, lack of a defiance period, neurasthenic symptoms, and school difficulties. (10 refs.) - *E. Kravitz.*

Arhus State Hospital
Risskov, Denmark

1199 **DUBOWITZ, VICTOR; & ROGERS, K. J.** 5-Hydroxyindoles in the cerebrospinal fluid of infants with Down's syndrome and muscle hypotonia. *Developmental Medicine and Child Neurology,* 11(6):730-734, 1969.

Central nervous system 5-hydroxytryptamine metabolism seems to be unaffected in children with Down's syndrome. The concentration of 5-hydroxyindoles was determined in the cerebrospinal fluid of 10 children with Down's syndrome associated with trisomy-21, 10 with severe hypotonia without Down's syndrome (all with mental retardation), and 21 "controls" with other conditions (6 with mental retardation). No significant differences were found among the 3 groups. (18 refs.) - *E. Kravitz.*

The Children's Hospital
Western Bank, Sheffield S10-2TH, England

1200 **ABBO, GISELA; & ZELLWEGER, H.** The syndrome of the metacentric microchromosome. *Helvetica Paediatrica Acta,* 25(1):83-94, 1970.

An SMR boy with irritability, destructive tendencies, undescended testicles, muscular hypertonia, and various constitutional stigmata had a small supernumerary metacentric chromosome similar to an F-chromosome but somewhat smaller. The mother, who had a normal phenotype, showed a chromosomal mosaicism with a small cell population presenting the supernumerary chromosome. The clinical features of this case are almost identical to those in previously reported cases. Since these cases probably represent a new cytogenetic disease, the name of "the syndrome of the metacentric microchromosome" is proposed. (17 refs.) - *K. Baer.*

University of Iowa
Iowa City, Iowa

1201 **GARDNER, LYTT I.; ASSEMANY, SALMA R.; & NEU, RICHARD L.** 46,XY female: Anti-androgenic effect of oral contraceptive? *Lancet,* 2(7674):667-668, 1970. (Letter)

A phenotypic female infant, with normal external genitalia and internal genitalia showing persistent mullerian elements and an embryonal testicular pattern of premature semniferous cords, is an example of either "naturally occurring" XY pure gonadal dysgenesis or a result of medication acting on the fetal testis as an antiandrogen. The mother admitted taking large quantities of norethindrone-mestranol contraceptive pills as soon as she knew she was pregnant. The infant, referred at 6 weeks for failure to thrive and a Robin/Lenstrup syndrome, had had a full-term gestation and no history of radiation; she died suddenly at 11½ weeks. Fetal testicular development, probably, was blocked in the first month of pregnancy, permitting the mullerian elements (tubes, uterus, upper vagina) and inhibiting organogenesis of the wolffian elements (epididymis, vas deferens, seminal vesicles) in an XY fetus. (11 refs.) - *B. Berman.*

State University of New York
Syracuse, New York 13210

1202 **KRMPOTIC-NEMANIC, JELENA.** Down's syndrome and presbyacousis. *Lancet,* 2(7674):670-671, 1970. (Letter)

An explanation for the impaired hearing in children with Down's syndrome derives from a comparison of findings on temporal bones in this syndrome with those in presbyacousis. Aging brings a progressive bone apposition, with resulting reduction in the number of nerve-fiber holes in the basal spiral tract, and, at times, atrophy of the central auditory fibers. A study of 114 temporal-bone sections confirmed the findings. This collection contained 2 cases of Down's syndrome: in one, the nerve bundles were less abundant than normal and the spiral tract showed bone apposition reminiscent of presbyacousis; in the other, there was a striking osteoid apposition corresponding to that in a person aged 40. These "aging process" changes may be responsible for the impaired hearing in mongoloid children. (8 refs.) - *B. Berman.*

Mt. Sinai Hospital Medical Center
Chicago, Illinois 60608

1203 **STARK, CHARLES R.; & RUDZKI, CESAR.** Infectious hepatitis and Down's syndrome. *Lancet,* 2(7672):572-573, 1970. (Letter)

Epidemiologic research on the possible association between infectious hepatitis and Down's syndrome suggests that infectious hepatitis is probably not a major etiologic factor for Down's syndrome. The design and statistical shortcomings of studies that report an association between infectious hepatitis and Down's syndrome are analyzed. Any study designed to show a specific relationship between the two conditions is only as specific as the diagnosis of infectious hepatitis. Future studies on this correlation should provide for maternal histories before delivery and histories of other, epidemiologically similar diseases; maternal age and family size of the subjects should be adequately controlled. (8 refs.) - *E. Kravitz.*

National Institute of Child Health
and Human Development
Bethesda, Maryland

1204 **SPARKES, ROBERT S.** Red-cell triosephosphate isomerase and chromosome 5. *Lancet,* 2(7672):570, 1970. (Letter)

Chromosome deletion may not necessarily be noted from appearance alone. Simple terminal deletion, intercalary deletion, and translocation could all give the same apparent deletion. The same apparent chromosome alteration might be caused by different etiologies, and different results could occur for red cell triosephosphate isomerase activity. This might account for the inability of other workers to confirm a genetic locus on the short arm of human chromosome 5 for this isomerase. Family studies and positive controls are suggested. (1 ref.) - *E. Kravitz.*

U.C.L.A. School of Medicine
Los Angeles, California 90024

1205 **SHOKEIR, M. H. K.** Genetic aspects of mental retardation. *Canadian Medical Association Journal,* 102(13):1410, 1970. (Letter)

An important area in the diagnosis and management of MR is the genetic aspect, including counseling and detection of carriers to reduce the number of retarded children. Through chromosomal studies, cell culture techniques, biochemical tests, radiological investigations, specialized clinical procedures, and other methods, it is often possible to elucidate the genetic etiology of many forms of MR. Phenylketonuria, galactosemia, mucopolysaccharidoses, and translocation mongolism are some of the disorders for which carriers can be detected and accurate genetic predictions made. Parents, siblings, and other interested relatives of the mentally retarded can be furnished precise or even empiric risk figures on possible recurrence. Such information will be helpful in family planning and may enable intervention during pregnancy or prompt treatment of the infant after birth as in phenylketonuria or before birth as in Rh isoimmunization with erythroblastosis. (No refs.) - *M-E. Sayre.*

University Hospital, Saskatoon
Saskatchewan, Canada

1206 Fabry's disease found in a fetus. *Medical World News,* 11(46):5, 1970.

Fabry's disease was diagnosed *in utero* by amniocentesis; an abortion was performed, and the diagnosis was confirmed in the aborted fetus. This disease is a sex-linked genetic recessive which affects males via females. The aborted woman had a brother with Fabry's disease. Her amniotic fluid had only 3% of the normal concentration of alpha-galactosidase, the enzyme needed to break down the sphingolipid ceramide trihexoside. Such lipids build up in the absence of the enzyme. Symptoms include central nervous system disturbances, corneal opacity, renal impairment, and cardiovascular disease. (No refs.) - *E. Kravitz.*

1207 **JACOBS, PATRICIA A.; AITKEN, JAMES; FRACKIEWICZ, ANNA; LAW, PAMELA; NEWTON, MARJORIE S.; & SMITH, PETER G.** The inheritance of translocations in man: Data from families ascertained through a balanced heterozygote. *Annals of Human Genetics,* 34(2):119-136, 1970.

Comparison between the pattern of inheritance of a balanced (either reciprocal or a Robertsonian-type of translocation) exchange of

chromosomal material and that of translocations involving an unbalanced carrier reveals that no unbalanced progeny were found in families where the index case was a balanced carrier and that transmission to male and female progeny was equal; in families ascertained through an unbalanced proband, female heterozygotes were more likely than males to produce unbalanced offspring. These results, obtained from data collected on families of 29 probands with a balanced exchange and from 14 additional ones reported in the literature, suggest that in many translocations either unbalanced forms do not occur during meiosis or that selection factors operating against the unbalanced gametes or the embryo eliminate them. In families ascertained through an unbalanced proband, liveborn offspring of female and male carriers have unbalanced forms in 15 and 8%, respectively, in cases of reciprocal translocation, and in 10 and 2%, respectively, when a Robertsonian translocation of the (DqGq) type is involved. These latter findings indicate that oogenesis may produce unbalanced gametes more frequently than spermatogenesis or that selection against the unbalanced gamete is more effective in the male. Evidence also suggests that an increase in prenatal and infant deaths occurs in families where reciprocal translocations are involved; however, no increase was observed in families with Robertsonian translocations. (31 refs.) - *M. S. Fish.*

Western General Hospital
Edinburgh, Scotland

1208 TAYLOR, A. I.; CHALLACOMBE, D. N.; & HOWLETT, R. M. Short-arm deletion, chromosome 4,(4p-), a syndrome? *Annals of Human Genetics,* 34(2):137-144, 1970.

Study of 2 cases of short-arm deletion of chromosome 4 and comparison with other reported cases has shown that the anomaly is characterized by marked intrauterine growth retardation and major abnormalities in all systems. These latter include: microcephaly, ocular hypertension, eye defects, cleft palate, heart and renal abnormalities, and hypospadias. Survivors are severely MR. The cause of the deletion is unknown. The 2 cases, a male and a female infant, both displayed multiple anomalies at birth and neither survived. Chromosomal analyses of the male showed presumptive deletion of most of the short arm of a B chromosome, assumed to be a chromosome 4 (46,XY,?4p-). A similar deletion of the short arm of a B chromosome, shown by autoradiographic and measurement studies to be 4 (46,XX,4p-), was found in the second case. The latter structural anomaly was not, however, restricted to simple deletion of the short arm – the long arm was abnormally short, and the origin of the anomaly was likely complex. Comparison of cases of 4p- with those of 5p- (cri du chat syndrome) indicates that the latter cases have much higher average birth weights and survival rates. (20 refs.) - *M. S. Fish.*

Guy's Hospital Medical School
S.E.1, London, England

1209 GOODER, JENNIFER M. The XYY male. *Nursing Mirror,* 130(15):20-22, 1970.

Because males having the XYY sex-chromosome syndrome are reportedly predisposed to antisocial behavior, a series of investigations has been undertaken in an effort to bring to light additional evidence. In 1961, through nuclear sexing and chromosomal analysis, several forms of chromosomal abnormality were identified. Three subsequent studies of residents in state hospitals revealed that the XYY male was unusually tall (average height: 6 ft 1 in), antisocial, and often MR. The current investigation is to discover the frequency of the XYY male within the general population. MRs, those with mental illness, inmates of penal institutions, and newborn infants were examined. The natural history of 22 XYY patients and 50 controls having normal chromosomal complements was investigated in depth at Rampton Hospital. Hospital records, family, school, and other possible sources were investigated in an attempt to compile complete pedigree, physical, and emotional histories for each patient, including abnormal behavior patterns. Preliminary data indicate that there are no striking differences between the XYY and control groups. It appears that family background is at least as important a determinant of antisocial behavior in the XYY as in the XY patient at Rampton. Frequency of XYY incidence is thought to be 1 in 1,000 or higher. (4 refs.) - *M-E. Sayre.*

University of Sheffield
Sheffield, England

1210 BLOOM, ARTHUR D.; NAKAGOME, YASUO; AWA, AKIO A.; & NERIISHI,

SHOTARO. Chromosome aberrations and malignant disease among A-bomb survivors. *American Journal of Public Health*, 60(4):641-644, 1970.

Approximately 50% of all persons exposed to high doses (over 100 rad) of ionizing radiation, such as A-bomb survivors, harbor residual chromosome aberrations from their exposure. They are capable of producing distinct subpopulations of cytogenetically aberrant cells *in vivo*. The proportion of aberrant cells, however, is dose- and age-dependent. Although these aberrations are not themselves indicative of any "radiation-induced disease," their potential relationship to neoplasia is important. The longterm, continued medical and cytogenetic surveillance of the A-bomb survivors will hopefully tell whether or not induced chromosome aberrations—whether viral, drug, or radiation produced—are of significant biological importance to man. (13 refs.) - *J. C. Moody.*

University of Michigan Medical School
1137 East Catherine Street
Ann Arbor, Michigan 48104

1211 **PERGAMENT, EUGENE.** Down's syndrome and infectious hepatitis. *Lancet*, 2(7684):1192, 1970. (Letter)

In order to assess the chromosome disorders which likely arise from the same biological mechanism (dysjunction) as does Down's syndrome, knowledge of the chromosomal constitution of human fertilizations which terminate in spontaneous abortions is also needed. Non-viable products of conception have chromosomal abnormalities which occur with a 20-fold greater frequency than do those observed in the live-born population. Since investigators studying the phenotypic recognition of Down's syndrome base their observations on less than 5% of the chromosomal aberrations in the population, the conclusions of previous investigators that non-randomness is biologically important requires re-examination based on such chromosomal studies. As a consequence, epidemiological interest in Down's syndrome, as related to such diseases as infectious hepatitis, should concentrate, instead, on chromosomal disorders of samples of all conceptions in order to determine more accurately the etiological relationships and to learn whether or not random distribution in terms of time, space, and pathogenic organisms exists. (2 refs.) - *M. S. Fish.*

Wyler Children's Hospital
University of Chicago
Chicago, Illinois 60637

1212 **PRIGOGINA, E. L.; STAVROVSKAJA, A. A.; KAKPAKOVA, E. S.; STRELJUCHINA, N. V.; ZAKHAROV, A. F.; LELIKOVA, G. P.; CHUDINA, A. P.; & POGOSIANZ, E. E.** Congenital chromosome abnormalities and leukemia. *Lancet*, 2(7671):524, 1970. (Letter)

Karyotypic examination of a group of patients with malignant disease of the hemopoietic system has failed to substantiate the idea that coexistence of such a disease with inborn karotypic abnormalities frequently occurs. In 100 patients (ages between 6 and >50 years) with malignant disease of the hemopoietic system, karyotypic analyses (of bone marrow aspirates in 19 and of blood lymphocyte cultures in 81) of at least 20 metaphases for all Ss revealed congenital anomalies of the karyotype in 4 patients: a balanced D/D Robertsonian-type translocation in a 29-year-old leukemic male; a large Y chromosome with elongated long arms in a 27-year-old male; elongated short arms of a D-group chromosome in a boy with leukemia in complete remission; and an enlarged submetacentric A1 chromosome in a 72-year-old female with chronic lymphocytic leukemia. The Robertsonian translocation was the only case in which inborn karyotype abnormalities were associated with chromosome breakage and rearrangement. This frequency of incidence (1/100) is of the same order as that observed in the general population, and the findings agree with those of previously reported studies of association of karyotypic abnormalities with malignancies of the hemopoietic system. (3 refs.) - *M. S. Fish.*

Academy of Medical Sciences
of the U.S.S.R.
Moscow M-478, U.S.S.R.

1213 **KATO, T.; JARVIK, L. F.; ROIZIN, L.; & MORALISHVILI, E.** Chromosome studies in pregnant Rhesus macaque given LSD-25. *Diseases of the Nervous System*, 31(4):245-250, 1970.

Although no significant increase in chromosome breaks was observed in offspring of female Rhesus monkeys which were given high doses of

LSD-25 during pregnancy, 3 of the 4 offspring died, and the mothers had a temporary increase in chromosomal abnormalities. The experimental animals were 6 female Rhesus macaque monkeys in the third or fourth month of pregnancy. After karyotypic analyses of leukocyte cultures, 4 were given subcutaneous doses of LSD (between 0.125 and 1.0 mg/kg for single doses with total doses ranging from 0.875 to 9.0 mg/kg/animal); the other 2 served as controls. In the treated mothers a transient increase in chromosome breaks occurred in 3, the greater break frequency appearing in animals receiving the higher doses; however, 1 of the 2 controls also showed a rise in break frequency. Post-drug cultures showed no major abnormalities, and the peak frequency returned to normal. Chromosomal analyses performed on 3 surviving infants (2 from control mothers) showed no significant chromosome breaks in the infant from the LSD-treated mother. A control infant had an unexplained break elevation at 14 months. Two infants were stillborn, and a third was weak at birth and died a month later. While the preliminary data provided by this pilot study afford no significant conclusions regarding the genetic hazards of LSD, they do suggest *in utero* toxicity of the drug. (29 refs.) - *M. S. Fish.*

Columbia University
New York, New York

MEDICAL ASPECTS – Miscellany

1214 **ERIKSSON, MARGARETA.** Salicylate-induced foetal damage during late pregnancy in mice: The modifying effect of repeated administration and dosage. *Acta Paediatrica Scandinavica,* 59(5):517-522, 1970.

A study of inbred A/Jax mice (to determine the prenatal effects of salicylate dosage and frequency of administration) showed that the LD 50 for sodium salicylate was 15.2 mg/20 gm. Perinatal fetal damage on day 17 of gestation was related to dosage; a 15 mg dose produced maternal and fetal death or premature delivery; a 10 mg dose produced varying results, such as fetal death or hemorrhage; a 3 mg dose had little or no fetal effect. Fetal death was lowered with repeated injections of sodium salicylate (10 mg/20 gm on days 15, 16, and 17) as compared with a group that received injections only on day 17. Pentobarbital (in narcotic doses) administered before the salicylate served further to reduce fetal mortality. Pentobarbital (but not salicylate) increased maternal liver microsomal hydroxylating enzyme for aminopyrine demethylation. Continuous drug administration, even for a short period, was able to modify the teratogenic response. (27 refs.) - *B. Berman.*

Karolinska Institutet
Stockholm, Sweden

1215 **WERTHEIM, E. S.** The syndrome of multiple minimal handicaps: Active involvement of the child, family and school in the management. *Australian Paediatric Journal,* 6(3):111-118, 1970.

A model is offered for dealing with the child with the multiple-minimal-handicaps syndrome (SMMH) that differs from the traditional approach in its involvement of patient, teachers, parents, and other professionals as active, responsible participants, not passive recipients of advice. Early diagnosis and intervention are crucial in preventing secondary reactions which obscure or exaggerate the organic element in hyperactivity, motor or language disorder, school failure, or emotional withdrawal. Prompt attention helps overcome the despair which most families experience when faced with an affected child. Also important are the stimulation of self-help, the revelation of hidden familial strengths, and relevant diagnostic observations deriving from involvement of all concerned as active allies—all helped by detailed suggestions on behavior control made by professionals. Better trained remedial teachers, aware of the child's problems are a vital ingredient in habilitation. At the beginning, 1 or 2 lengthy sessions are enough to start the self-help process; after that, reviews every 3-6 months, then yearly and every 2 years, are sufficient. Time and funds are needed to draw

out and use the latent personal strengths of all participants. (2 refs.) - *B. Berman.*

University of Melbourne
Melbourne, Australia

1216 **THOMPSON, HORACE; COWEN, DAVID L.; & BERRIS, BETTY.** Therapeutic abortion: A two-year experience in one hospital. *Journal of the American Medical Association,* 213(6):991-995, 1970.

A liberalized abortion law in Colorado (passed in 1967) has permitted some generalizations bearing on the abortion problem. During the first 2 years under the new law, the Denver General Hospital Therapeutic Abortion Board approved 249 (mostly for psychiatric reasons) and rejected 155 applications for therapeutic abortion. The large number of requests from all over the United States has required setting a state residency requirement. About half the abortions have been for low-income or medically indigent persons, many young (under 20) and unmarried. (Contrary to popular belief, most requests do not come from multiparous women, for whom contraception is readily available.) Criteria for abortion are: medical, rape and incest, fetal abnormality, and psychiatric. Major problems involve evaluation of psychiatric indications, moral and religious scruples of obstetricians and nurses, and lateness in requesting an abortion (most have had to be done after the twelfth gestation week). New and safer methods of performing abortions are being sought since, even in experienced hands, there have been problems with the "foolproof" methods (suction curette and amniocentesis with injection of hypertonic salt solution). (5 refs.) - *B. Berman.*

Denver General Hospital
Denver, Colorado

1217 **LASCARI, ANDRE D.; & BELL, WILLIAM E.** Pseudotumor cerebri due to hypervitaminosis A: Toxic consequence of self-medication for acne in an adolescent girl. *Clinical Pediatrics,* 9(10):627-628, 1970.

The seventh reported case of pseudotumor cerebri (benign intracranial hypertension) secondary to vitamin A intoxication occurred in a 15-year-old girl medicating herself for acne. She presented with headaches and diplopia but looked well. Examination revealed papilledema and a sixth nerve palsy. The S revealed that she had taken 200,000 to 300,000 units/day of vitamin A for over a year. A careful history of drug ingestion should be taken in individuals when benign intracranial hypertension is suspected. (10 refs.) - *E. L. Rowan.*

University Hospitals
Iowa City, Iowa 52240

1218 **GOODLIN, ROBERT C.; & FABRICANT, STEPHEN J.** A new fetal scalp electrode. *Obstetrics and Gynecology,* 35(4):646-647, 1970.

An inexpensive, durable, and easily applied fetal scalp suction electrode has been devised. The improved model utilizes silver-silver chloride discs which are molded into an epoxy support inside of a suction cup and are connected to electrocardiogram (EKG) equipment. A suction line attaches to regular laboratory vacuum equipment and provides for cleaning of debris from the chamber. The entire electrode is only 1 inch in diameter, is easily inserted in a 3-cm dilated posterior cervix by all grades of delivery room personnel, and does not leave discrete scalp markings on the newborn. In 158 attempts at application, failure to record a fetal EKG occurred on only 17 occasions, likely due to lack of clearance of mucus or membranes from the electrode. Problems of attachment and associated trauma which occur with the skin-clip models are avoided with the suction electrode which can be kept safely in place for many hours and has received wide acceptance by both physicians and patients. (4 refs.) - *M. S. Fish.*

Stanford University Medical Center
Palo Alto, California 94305

1219 **CLAYTON, EVERETT M., JR.; FOSTER, ELINOR B.; & CLAYTON, ELIZABETH P.** New stain for fetal erythrocytes in peripheral blood smears. *Obstetrics and Gynecology,* 35(4):642-645, 1970.

Two simple, rapid, and reliable variations of a new staining method for fetal erythrocytes in

peripheral maternal blood have been devised. Both techniques rely on the differential staining ability of aniline blue and Biebrich scarlet, and the more simple of the 2 variations is adequate for most postpartum slides in cases where antepartum fetal cell transfer is to be investigated. Its main disadvantage, compared with the second technique, is the danger of destroying membranes of adult cells during laking and a greater variability in color differentials. The procedure involves mixing the peripheral maternal blood with potassium and ammonium oxalate, smearing specimens on slides, drying, washing in alcohol, followed by rinsing and treatment with aniline blue in McIlvaine's buffer. The washed specimen is then stained in Biebrich scarlet, washed, and dried. In the more rigorous technique, separate treatment with McIlvaine's buffer and Biebrich scarlet occurs and precedes the staining with aniline blue. Experience with both methods has indicated far greater reliability and convenience than that found with the Kleihauer-Betke procedure. (4 refs.) - *M. S. Fish.*

Saint Thomas Hospital
Nashville, Tennessee 37203

1220 **WRIGHT, T. L.; HOFFMAN, L. H.; & DAVIES, J.** Lithium teratogenicity. *Lancet*, 2(7678):876, 1970. (Letter)

Serum lithium levels in the therapeutic range for humans were found to be teratogenic in the rat. Malformations were noted in the eyes (62%), cleft palate (39%) and external ear (45%). The ear abnormalities were similar to those seen in a human baby born to a mother treated with lithium during pregnancy. (2 refs.) - *E. L. Rowan.*

Vanderbilt University School of Medicine
Nashville, Tennessee

1221 **DINER, HAROLD.** Dentistry. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 5, p. 60-75.

Although the common dental disorders (caries, peridontal disease, malocclusion, and abnormal eruption patterns) occur in both normal and MR populations, aberration in dental and oral development occurs with greater frequency in MR and physically handicapped children than in normal populations. A number of reports have indicated that institutionalized MRs have fewer dental caries than do normal subjects. Individuals with Down's syndrome appear to be particularly resistant to this problem; however, institutional diets with restriction of random consumption of cariogenic materials may be involved. The presence of a caries-resistant factor in MR Ss has been suggested as a possible explanation of these differences; however, other reports do not confirm these findings and suggest that lack of dental care and difficulty in dietary control may sometimes cause a higher rate of caries in MR Ss. Peridontal disease appears to occur more frequently among MR Ss than normals, probably because of poor dental hygiene of the MR. In contrast to the incidence of caries among Ss with Down's syndrome, peridontal disease occurs with considerable frequency among these cases. Since about 50% of all children have dental malocclusions, the many factors which contribute to this problem make a correlation of malocclusion with MR difficult. Also, among normal populations, wide variations in tooth eruption patterns exist, again making difficult an assessment of comparisons of this problem between MR Ss and normals. In terms of aberrations of dental and oral development, however, reviews of the problem indicate a much higher frequency among MR populations. Many MR Ss have congenitally absent teeth, indicating a relationship with organic brain damage or with metabolic disturbances. MR Ss also have a greater incidence of supernumerary teeth. Association of abnormalities of dental crowns and of enamel hypoplasia with MR have also been reported. Anatomic variations in oral structures and differences in tooth color are influenced by a variety of conditions, and the degree of their association with MR has been difficult to determine. Realistic programs to add proper dental care to the other services required by the MR are needed. (85 refs.) - *M. S. Fish.*

1222 **MORAGAS, A.; & *BALLABRIGA, A.** Pulmonary granulomatosis in children caused by vegetable cells. *Helvetica Paediatrica Acta*, 25(I):40-49, 1970.

Pulmonary granulomatosis caused by vegetable cells was diagnosed in 4 infants (I with Down's syndrome). From the histological point of view, the Ss had granulomas formed by histiocytes and multinucleate giant cells with PAS-positive particles, which did not present starch reactions and

were largely birefringent and by the presence of vegetable residues (partly enclosed in giant cells) in some areas. In the older lesions, a fibrous evolution was observed, and the vegetable particles were more difficult to identify. The children were generally in poor condition and presented other pulmonary lesions. No characteristic symptoms existed before death. In 3 cases, the aspirated particles came from carrots fed in a diluting liquid as part of the milk formula. In the fourth case, carrots and flour of Ceratonia siliqua had been fed. (7 refs.) - *K. Baer.*

*Children's Hospital
Barcelona, Spain

1223 **MOLZ, GISELA.** Der Wandel der Kindersterblichkeit in den vergangenon 100 Jahren (The changes in infant mortality during the last 100 years). *Helvetica Paediatrica Acta*, 25(1):1-12, 1970.

Examination of 5,461 infants autopsied at the Institute of Pathology of the University of Zurich from 1883 to 1968 and 289 newborns autopsied at the Institute of Pathology of the University of Dusseldorf from 1957 to 1961 reveals that there have been changes in infant mortality during the last 100 years. Epidemics, many infectious diseases, appendicitis, and goiter have practically disappeared, while malformations, tumors, leukemia, and accidents present a significant increase. Childhood mortality has become perinatal mortality for mortality in newborns has increased since 1900 and now accounts for 66% of the childhood mortality, with 80% of these infants dying during the first week of life. (10 refs.) - *K. Baer.*

University of Zurich
Zurich, Switzerland

1224 Deadly diapers. *British Medical Journal*, 2(5705):314, 1970.

Evidence accumulated over the years points up the danger of various chemicals applied to the skin or diaper of a baby. Marking ink (an aniline dye) and boric acid (often contained in dusting powders) have previously been implicated in sometimes fatal infant illnesses. Recently, pentachlorophenol (PCP), used in the laundering of diapers and infants' bed linen in the United States, caused the development of fever, tachycardia, excessive sweating, and dypsnoea in 9 neonates, with hepatomegaly in 6 and splenomegaly in 2 of them, before the causal factor was isolated. Often a pathogenic organism is blamed for such outbreaks of illness among neonates and when such an agent cannot be isolated, an unknown virus is blamed; much valuable time is lost when the true cause is chemical poisoning. (11 refs.) - *N. Mize.*

1225 **FRASER, G. R.** Genetical aspects of severe visual impairment in childhood. *Journal of Medical Genetics*, 7(3):257-267, 1970.

Because of the lack of acceptable criteria for severe visual impairment (except for total loss of vision) and since the nature and results of treatment may significantly affect the outcome, quantitative assessment of genetically determined diseases causing severe impairment of vision in childhood is difficult. A qualitative grouping of such diseases includes: choroidoretinal degenerations, retinoblastoma, pseudoglioma, optic atrophy, cataracts, myopia, retinal detachment, corneal lesions, microphthalmos, coloboma, anophthalmos, aniridia, buphthalmos, and various inherited syndromes in which the eye is affected along with various other organs. Choroido-retinal degenerations are the most common single cause of visual impairments in childhood, and most are inherited in an autosomal recessive manner. Severe visual impairment may, in as much as one-half of the cases, be due to acquired causes; however, about 5-10% are due primarily to polygenic inheritance. In many cases environmental environmental causes interact with genetic factors to cause the impairment. In chromosomal aberrations involving the autosomes, severe ocular involvement occurs commonly. (62 refs.) - *M. S. Fish.*

Department of Medicine
University of Washington
Seattle, Washington 98105

1226 **KAY, H. E. M.** Genetics of immunity deficiency syndromes. *Journal of Medical Genetics*, 7(4):310-314, 1970. (Annotation)

Recent advances in experimental immunology and clinical medicine, the latter contributing to

the recognition of various syndromes of immune deficiency, have provided a broader base from which to assess the genetics of these defects. Components involved in immune processes include effector cells concerned with both antibody and cell-mediated immunity, antigen-sensitive lymphocytes, memory cells, and macrophages. The interrelationship of these components involves many steps where failure may occur and result in consequent deficiency. The most frequent disorder is that of the antibody-forming system where X-linkage is the most common mode of inheritance. Cellular immune deficiency may be associated with normal antibody synthesis; however, such conditions are rare. More common are disorders of combined immunity deficiency which can result in fatal infections. Some forms may be inherited as autosomal recessive, others as sex-linked recessive disorders. The defects in these latter syndromes are in the thymus or in the primitive stem cells. The Wiskott-Aldrich syndrome and so-called "acquired" deficiency (appearing later in life) are examples of 2 other conditions affecting specific immune mechanisms. Disorders of the nonspecific system of immunity are too rare for a determination of their genetic basis. Chronic granulomatous disease, once believed to be X-linked recessive, presents an interesting genetic problem. Although typical patients are boys, recent observations indicate that fathers and other male relatives may also have abnormalities in leucocyte function, thus indicating an autosomal recessive mode of inheritance. (48 refs.) - *M. S. Fish.*

Royal Marsden Hospital and
Institute of Cancer Research
London S.W.3, England

1227 SANKAR, D. V. SIVA. Biogenic amine uptake by blood platelets and RBC in childhood schizophrenia. *Acta Paedopsychiatrica,* 37(6):174-182, 1970.

An investigation of uptake of serotonin and norepinephrine by thrombocytes and erythrocytes from schizophrenic and nonschizophrenic children has disclosed a significant difference in uptake between the 2 groups. Three separate experiments were performed with a total of about 200 children, ages 5-15 years, diagnosed as schizophrenic (undifferentiated or autistic), disorder of behavior and character (termed nonschizophrenic), and psychotic (with or without brain damage or mental deficiency). Incubation with serotonin creatinine sulfate of platelet-rich plasma from one experimental group resulted in significantly lower uptake of serotonin by platelets from schizophrenic children, especially autistic Ss. These latter Ss also had the highest ratios of uptake of norepinephrine/serotonin. Other experiments related to uptake of serotonin and norepinephrine by erythrocytes from children in the different diagnostic categories provided no statistically significant differences. Serotonin uptake by platelets appears to increase with increasing age of the S. (4 refs.) - *M. S. Fish.*

Creedmoor State Hospital
Queens Village, New York 11427

DEVELOPMENTAL ASPECTS - Physical

1228 **FITZGERALD, MARY DALE; SITTON, ANN B.; McCONNELL, FREEMAN.** Audiometric, developmental, and learning characteristics of a group of rubella-deaf children. *Journal of Speech and Hearing Disorders*, 35(3):218-228, 1970.

Tests of audiometric, developmental, and learning traits of 19 hearing-impaired children (average age 3 years, 10 months) of rubella mothers revealed very severe hearing loss (mean best binaural average for pure tones was 91 dB) and a relatively flat mean audiometric configuration for air-conduction pure tones. Experienced audiologists tested each S with play audiometry and conditioning techniques. Height, weight, and head circumference measurements of 12 Ss showed 10 below the sixteenth percentile in weight, 75% below mean height, and all below the mean in head circumference. All showed normal motor development and mental functioning (Nebraska Test of Learning Aptitude). In all cases, the severity of hearing loss correlated with how early in gestation the mother had contracted rubella. (18 refs.) - *B. Berman.*

Vanderbilt University
Nashville, Tennessee 37203

1229 **INSTITUTO INTERAMERICANO DEL NINO.** Sugerencias para la evolucion del desarrollo: 0-5 anos (Suggestions about the evolution of development: 0-5 years)., *Publicaciones sobre Retardo Mental*, Number 11, Montevideo, Uruguay, 1970, 29 p. Mimeographed.

This brochure, issued by the Mental Retardation Section of the Interamerican Institute for Children, puts at the disposal of specialists, trained personnel, and parents of young children extensive checklists, broken down by age groups, of the normal evolution of a child and the practical ways of helping a child achieve every stage. Charts for making up a profile of the evolution on the basis of the results of the checklist are appended to allow an assessment of the evolution and detection of possible retardation. (No refs.) - *G. Van Massenhove.*

1230 The kinetics of growth. *Lancet*, 2(7685):1234, 1970.

The various body parts seldom grow at the same rate at the same time, and nutrients cannot, therefore, be shared out on a weight-for-weight basis in the developing body. Time is a crucial factor in growth; it has been shown that varying the plane of nutrition early in life affects ultimate size. In addition to food, growth, and time, external temperature after birth is important. At London's Hammersmith Hospital, measurements of 2 groups of infants (one that had grown normally up to the time of birth, and one that was "small for dates") showed that the second group had larger heads and possibly larger brains, and that head growth after birth had improved over the past 5 years (the infants had been kept warmer and fed earlier after birth). The size an animal ultimately attains after a period of malnutrition determines brain weight. (No refs.) - *B. Berman.*

1231 **DONOGHUE, ELAINE C.; KIRMAN, BRIAN H.; BULLMORE, G. H. L.; LABAN, DESA; & ABBAS, K. A.** Some factors affecting age of walking in a mentally retarded population. *Developmental*

Medicine and Child Neurology, 12(6):781-792, 1970.

Unless a specific motor disability is present, nearly all trainable SMR children will learn to walk, and most of the PMR will also learn; however, children with Down's syndrome who remain at home are likely to walk earlier than are comparable institutionalized patients. Of 336 severely retarded children (70 with Down's syndrome, 137 residual cases, and 129 with cerebral palsy) the number of walkers and mean ages at walking were, respectively: 56, 108 and 11; and 3.2, 4.2 and 5.3 years. Age at walking and IQ appeared to be related in that all Ss with an IQ over 50 walked before 4 years and all who first walked after 7 years were PMR. All trainable Ss, except a number with cerebral palsy, had walked by 8 years. Assessment of a separate group of ambulant adults with Down's syndrome showed that the mean age at walking was 2 years 5 months and 4 years 5 months, respectively, for those who walked before leaving home and those who walked after admission to the hospital. Intelligence levels were comparable for these latter 2 subgroups. (12 refs.) - *M. S. Fish.*

Queen Mary's Hospital for Children
Carshalton, Surrey, England

DEVELOPMENTAL ASPECTS – Mental

1232 **FIELD, ALLEN.** Spina bifida: Learning problems. *Special Education*, 59(3):14-15, 1970.

For the child with spina bifida, inherent learning difficulties (associated with various anomalies including congenital brain damage from developmental injury or hydrocephalus, lack of sensation below the spinal lesion, left-handedness, squinting, and deafness) can usually be compensated for. Most of his personality and learning difficulties are acquired after birth (some thrust upon him by an unthinking society) and include poorly timed surgery (to remove the meningocele, or insert the Spitz Holter valve, or urinary diversion), parental guilt and consequent marital discord, absence of finer finger and various muscle movements, bladder and bowel incontinence associated with classroom anxiety, hostile social climate, and premature IQ labeling. If a child with spina bifida fails to progress educationally, it is more often because of lack of learning opportunities rather than the absence of learning ability. (No refs.) - *B. Berman.*

Oakes Park School
Sheffield, England

1233 **AUXTER, DAVID.** Reaction time of children with learning disabilities. *Academic Therapy*, 6(2):151-154, 1970.

Comparison of 2 groups of preschool children (one with a learning disability) showed no differences in visual and auditory reaction time but a difference (.05 level of confidence) in speed-of-limb movements. The learning-disability group had a mean age of 70 months and an IQ range of 78-109. Reaction-time stimuli were elicited from a bulb placed 3 feet from the S, seated at a table, who depressed a key in response to the stimulus. The speed-of-limb movement test required localization of the hand on 2 targets. Although the literature is not precise in defining the "learning-disabled" child, it is of note that his IQ (although below a normative mean) falls within the normal-intelligence range. (2 refs.) - *B. Berman.*

Slippery Rock State College
Slippery Rock, Pennsylvania 16057

1234 **RASKIN, LARRY M.** Influence of amount of training and retention interval length on long-term perceptual memory in normal and educable-retarded children. *Perceptual and Motor Skills*, 31(1):191-194, 1970.

EMR children and normal Ss of comparable MA have similar retention over short time intervals when tested for the influence of perceptual memory on perception of apparent movement; however, EMR Ss require considerably more training if the effects of memory are to persist over longer intervals. The study groups were 36 EMR children and 24 normal third graders who

were trained to watch a particular sequence (arrow-square) on a motion picture screen and then tested with another (arrow-arrow), while keeping their eyes on a black circle. Test sessions were conducted either 3 minutes or 24 hours after training sessions. Results showed that reports of "no movement," indicative of effects of training in hindering perception of the illusion, were comparable for both groups tested after the 3-minute intervals and trained with a sequence of 30 repetitions. Comparison of the 2 groups tested 24 hours after training with a sequence of 30 repetitions showed that only 3 of 12 EMRs reported no movement as compared with 10 of 12 normals. Of the 12 EMRs trained with 60 repetitions and tested 24 hours later, 9 reported no movement. These findings suggest the need for repeated presentation of material to EMR Ss if retention is to be maintained over a period of time. (5 refs.) - *M. S. Fish.*

Purdue University
Lafayette, Indiana 49707

1235 **SCHOENFELD, LAWRENCE S.** Effects of auditory stimulation on the performance of brain-injured and familial retardates. *Perceptual and Motor Skills*, 31(1):139-144, 1970.

An investigation of the effects of extraneous auditory stimulation on the performance of brain-injured and familial MRs has provided no significant differentiation in performance of the 2 groups. When 18 matched pairs of MRs (1 brain-injured S and 1 familial retardate in each pair) were given a task (drawing lines through a particular letter in a group of randomized letters) under 3 separate levels of auditory stimulation, mean scores showed that the familial retardates did better under all 3 conditions than did the brain-injured group; the latter Ss had fewer errors under intermittent auditory stimuli than under no or continuous stimuli; however, the familial retardates performed better when no auditory stimuli were present. An analysis of variance showed that the performances of the groups were not significantly different under the 3 conditions. (17 refs.) - *M. S. Fish.*

University of Texas Medical School
at San Antonio
San Antonio, Texas

1236 **WIENER, GERALD.** The relationship of birth weight and length of gestation to intellectual development at ages 8 to 10 years. *Journal of Pediatrics*, 76(5):694-699, 1970.

A study of the possible correlation of birthweight with intellectual deficits has shown that impairment within a given group apparently is not a direct result of gestational age and that other pathological processes may be involved. The Ss were 500 low-birth-weight and 492 full-term infants, examined at 40 weeks of age. Of this group, 822 were again tested at 8-10 years of age (Wechsler Intelligence Scale for Children, the Bender-Gestalt test, and the Wide Range Achievement test). Results, which were analyzed by different methods, showed that for any given birth weight of this low-range group, intellectual impairment had no relation to the length of gestation. An unexpected finding was the observation that when birth weight, race, and socioeconomic status were controlled, infants with birth weights greater than 2,500 g and with shortened gestational ages had significantly lower IQ scores and indications of other psychological impairment at ages of 8 to 10 years than did comparable infants born at term. These results, combined with other reported studies showing that high birth weight-low gestational age infants have a high neonatal mortality, suggest that the infants either were too large for their age and comprise a special pathophysiological group, or that the mothers underestimated gestation time. (13 refs.) - *M. S. Fish.*

Johns Hopkins University
Baltimore, Maryland 21205

1237 **MALONEY, MICHAEL P.; & CHARRETTE, HARRIETT.** Note on the effects of a gross-motor approach to training attention control on discrimination learning in mentally retarded Ss. *Perceptual and Motor Skills*, 31(1):41-42, 1970.

Increase of attention control or attention span in 22 SMR and PMR institutionalized males (CA 6-12 yrs) by use of a gross-motor approach has proved helpful in improving visual discrimination learning rates. The Ss were divided into a walking-board group and an attention-control group. The former group was taught to walk forward, backward, and sidewise on an elevated rail. Sessions comparable in time (5-minute periods, 5 days a week for 4 weeks) were also

held for the latter group but consisted of talking and playing. When a 2-choice visual discrimination learning task (choosing between a red block and a green disc) was given to both groups, the Ss trained on the walking board learned the criterion for selection significantly faster than did the control group. (2 refs.) - *M. S. Fish.*

Pacific State Hospital
Pomona, California 91766

1238 **REITAN, RALPH M.** Sensorimotor functions, intelligence and cognition, and emotional status in subjects with cerebral lesions. *Perceptual and Motor Skills,* 31(1):275-284, 1970.

Comparison of 2 groups of Ss with traumatic, neoplastic, or vascular lesions (sensorimotor functions relatively intact in 1 group and relatively impaired in the other) by means of various measures of intellectual and cognitive functions showed that impairment of these functions had a strong relation to intellectual and cognitive measurements, with the impaired group being greatly inferior to the other. Ss were selected from a sample of 197 patients on the basis of sensorimotor deficits. The impaired group (30 men and 3 women) and the intact group (25 men and 6 women) were examined for sensorimotor functions; the Wechsler-Bellevue, Halsted, and Trail Making tests; and the Minnesota Multiphasic Personality Inventory. Results of the various tests suggest that the impaired group is quite distressed from an emotional and affective point of view, and the findings may have significance for neurological and neuropsychological clinical evaluation. (16 refs.) - *M. S. Fish.*

Indiana University Medical Center
Indianapolis, Indiana 46207

1239 **SKUBIC, VERA; & ANDERSON, MARIAN.** The interrelationship of perceptual-motor achievement, academic achievement, and intelligence of fourth grade children. *Journal of Learning Disabilities,* 3(8):413-420, 1970.

Intelligence and academic achievement were found to correlate highly with performance on a battery of 11 perceptual motor tests in a group of 86 fourth grade students of normal intelligence. Students were designated as high or low achievers on the basis of the Stanford Achievement test and intelligence was measured by the California Test of Mental Maturity. Low achievers were noted to be significantly poorer on tests of choice reaction time, McCloy block test, right foot balance, balance beam, throwing test, and side-slide test. Such underachievers might be identified by perceptual-motor testing and a remedial program established to meet their needs; however, factors such as lack of interest, emotional problems, and poor teaching may also cause learning problems and should be considered. (17 refs.) - *E. L. Rowan.*

University of California
Santa Barbara, California 93106

1240 **KLEES-DELANGE, M.** Les troubles instrumentaux (Instrumental disorders). *Acta Paediatrica Belgica,* 24(3-4):309-316, 1970.

In 1963, Haim defined the term "instruments" as "the total of neurobiological facts taking part in the adaptation of man to his material surroundings by motor activities and to his human surroundings by means of language." That definition has been modified and the name of "instrumental disorders" given to disorders of perception, motor, and language which appear to be due to defects of the neurophysiological processes involved. Involvement of affectivity and personality may occur and is sometimes severe. The prognosis for the intellectual and socio-affective development of children with instrumental disorders is grave when they present a low IQ, but more favorable when the IQ exceeds 110. The neurological and psychological examinations required for a quantitative and qualitative evaluation, in particular, the applicable psychological tests, are described in some detail and an outline of treatment is presented. This is a new field requiring considerable additional research; the superficial stage of analytical description will have to be overcome so that one may penetrate more deeply into interpretation based on an understanding of the underlying cerebral mechanisms. (3 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

1241 **RICE, JAMES A.** Confusion in laterality: A validity study with bright and dull

children. *Journal of Learning Disabilities*, 2(7):368-373, 1969.

The incidence and correlates of confusion in laterality were investigated in 200 bright children (50 each from kindergarten through grades 3) and 41 EMR children. Right-left discrimination, language behavior, hearing, vision, reading, and arithmetic were tested. Results indicated that children who manifest laterality confusion were significantly younger than their unconfused peers. Laterality confusion was largely related to CA and intellectual level and did not appear to decline more rapidly in bright children. Measures of language and achievement were only moderately related to laterality confusion. The support of the validity criteria and the obtained conclusions is fundamental to a more thorough study of laterality confusion and other educationally relevant variables that determine early failure in school. (10 refs.) - *B. J. Grylack.*

University of Houston
Houston, Texas 77004

1242 **ANDERSON, V. ELVING; SIEGEL, FELICIA S.; FISCH, ROBERT O.; & WIRT, ROBERT D.** Responses of phenylketonuric children on a continuous performance test. *Journal of Abnormal Psychology*, 74(3):358-362, 1969.

The performance of phenylketonuric (PKU) children on tasks requiring continuous attending is significantly lower than that of comparable normal children. Ss were 11 PKU children, 9 of whom were on a low phenylalanine diet (mean CA 10 yrs 8 mos; mean IQ 78.4) and 11 non-PKU controls (mean CA 10 yrs 7 mos; mean IQ 78.4) who were also matched for sex and race. Results from 2 tasks (identifying a tree from a series of pictures and identifying a tree from a series only after the picture of a ball preceded it) indicated that this type of test, which requires continuous attention, elicited significantly fewer correct responses from the PKU Ss than from the controls. Responses from PKU Ss were also later, and fewer correct responses from this group occurred near the end of the experiment compared with those of the control Ss; however, the performance of the 2 groups did not differ significantly when correct late responses were added to the total of correct responses, indicating that the experimental group could recognize a correct sequence but was unable to respond promptly. The size of the experimental groups was insufficient to provide comparisons of the effect of IQ and diet on performance. (4 refs.) - *M. S. Fish.*

University of Minnesota
Minneapolis, Minnesota 55455

1243 **ELLIS, M. J.; & CRAIG, T. T.** A note on the inferiority of retardates' motor performance. *Journal of Motor Behavior*, 1(4):341-346, 1969.

Since EMR children learned and performed a discrete novel motor task similarly to matched normal Ss when contamination of the test with inferior cognitive elements was minimized, the appearance of general inferiority of retardates on motor performance tests may be partly due to this contamination. The Ss were 17 EMR children (mean MA 8.1; mean CA 12.78; mean IQ 73.78), 17 MA normals (mean MA 8.80; mean CA 8.41; mean IQ 101.6) and 17 CA normals (mean MA 13.0; mean CA 12.65; mean IQ 95.76). These randomly selected Ss were asked to estimate a 2.0 second time interval by moving a slide and responding appropriately to the results of each task. Findings indicated that nearly identical curves were obtained for all 3 groups. The EMR and CA normals achieved criterion (2 of 4 responses within 0.05 second of target time) more rapidly than did the MA normals, although the older CA normals were superior on every measure. The results indicate that more tightly designed experiments should be formulated in order to manipulate the contaminants directly and to learn more regarding the extent to which EMRs can function in a manner similar to normals. (10 refs.) - *M. S. Fish.*

University of Illinois
Urbana, Illinois 61801

1244 **MEILI, RICHARD.** Faktorenstruktur und Intelligenzentwicklung (Factor structure and mental development). *Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen*, 29(3):404-416, 1970.

With regard to the controversial evidence as to Garrett's differentiation hypothesis, a distinction is proposed between primary and secondary factors of intelligence. Secondary factors (v, n, s,

etc.) depend on specific experience; consequently, they emerge and are subject to change in the course of mental development. But, preliminary data suggest the stability of the structure as well as the relative strength, within any given individual, of the primary factors (complexity, plasticity, globalisation, and fluency). If this hypothesis proves to be correct, it follows that the increase in mental capacity is to be explained by additions to, and structural changes in, the mental organization. Accordingly, intelligence factors do not determine the intellectual level of an individual but, rather, are the antecedents of his different achievements in various types of problems, at his general achievement level. (22 refs.) - *Journal Abstract.*

Bern University
Bern, Switzerland

1245 **AEBLI, HANS.** Kognitive Entwicklung als Aufbau in einem sozio-kulturellen Kontext (Cognitive development as a structuring process in a socio-cultural context). *Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen,* 29(3):389-403, 1970.

The formation of cognitive structures in human development is viewed as a structuring process establishing relations between elements and generating hierarchical systems. The most important structuring processes do not occur "spontaneously" but, rather, come about under guidance, i.e. in a socio-cultural context. A new interpretation of the processes in Geneva-type experiments and a new model of development are derived from this conception. (18 refs.) - *Journal Abstract.*

No address

1246 **DROZ, REMY.** Tentatives d'applications de la psychologie et de l'epistemologie genetiques (Tentative applications of genetic psychology and epistemology). *Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen,* 29(3):417-422, 1970.

A number of tentative applications of Piaget's genetic psychology and epistemology in the fields of applied psychology (clinical, and counseling) and education are briefly enumerated and described. They include measurements of the cognitive development (sensory-motor and operational development), comparative studies, the analysis of special forms of reasoning and cognitive function (retardation and abnormalities), methodological advances (standardization of tests), and quantification tests as well as numerous applications in education including the development of new forms of instruction. (3 refs.) - *K. Baer.*

University of Geneva
Geneva, Switzerland

1247 **JENSEN, ARTHUR P.** The role of verbal mediation in mental development. (In press: *Journal of Genetic Psychology*), July 1969.

Conceptions of the nature of mental development and social concern with the educational problems of culturally disadvantaged children highlight current theory and research on verbal mediation. The cumulative learning model seems to provide the best hopes for improving the educability of children from poor families. One of the main problems is to determine the extent to which some cognitive behaviors achieved through special training merely simulate the same behaviors achieved through development. Experiments are being conducted with various mediation phenomena and paradigms, including labeling, mediated and semantic generalization, far transposition, reversal-nonreversal shift, experimentally acquired mediation, implicit changing paradigm, associative clustering, verbal self-reinforcement, syntactic mediation, and mnemonic elaboration. Great emphasis has been placed on stimulating training and developing educationally relevant cognitive processes in children whose deficiencies in these processes are believed to be due to certain cultural or environmental lacks during the preschool years. Contemporary education is geared especially to conceptual models of learning, and many children with weaknesses in this area, despite superior associative learning ability, are frustrated by schooling and learn much less than their associative learning level warrants. (45 refs.) - *B. J. Grylack.*

University of California
Berkeley, California 94720

1248 **SIMPSON, RICHARD L.; KING, JOHN D.; & DREW, CLIFFORD J.** Free recall by retarded and nonretarded subjects as a function of input organization. *Psychonomic Science*, 19(6):334, 1970.

To compare free recall performance as a function of input organization, 15 retarded Ss (IQs 50-70) and a group of college students the same age were asked to recall the contents of 10 5-word lists immediately after hearing each list read aloud. Half of the lists were arranged alphabetically and by conceptual category (trees, fruits, etc.); the rest were unorganized. Analysis of variance showed significant ($p<.01$) interaction between S classification and type of list. Nonretardates' performance did not differ with stimulus material organization, which suggests that external material organization may be of no consequence in normal immediate recall. Retardates recalled significantly ($p<.01$) more items from organized than from unorganized lists. It would appear that external organization of input material significantly influences the level of retardate recall. Results support the hypothesis that the retardate is deficient in his ability to impose organization or codify material. (7 refs.) - *J. C. Moody.*

Olathe Unified Schools
Olathe, Kansas 66061

1249 **McBANE, BONNIE M.; & ZEAMAN, DAVID.** Dimensional control of retardate memory. *Psychonomic Science*, 19(2):104-105, 1970.

Twenty retardates (mean IQ of 54; mean CA of 14 yrs) performed a series of 2-choice visual discrimination tasks over a 10-day period to determine whether the stimulus dimensions of color and form (rather than specific cues of these dimensions) control the memory of retardates. The data indicate that color and form did control the development of proactive interference in the retardates' learning and retention. A change in the relevant dimension from form to color or from color to form resulted in a release from proaction. The dimensionality of control in retention parallels that found in attention. (13 refs.) - *J. C. Moody.*

University of Connecticut
Storrs, Connecticut 06268

1250 **DAS, J. P.; & BOWER, A. C.** Development and persistence of acquired meaning in retarded and normal children. *Psychonomic Science*, 18(4):241-242, 1970.

Retarded children (mean IQ, 71; mean CA, 119 mos) from special classes in public schools and 3 groups of normal children from the first, third, and fifth grades were given a task which consisted of acquiring a favorable impression of a fictitious person and an unfavorable impression of another fictitious person, then reversing these impressions, and, finally, rating the 2 persons on a 5-point scale indicating how much the S liked or disliked the 2 persons. Retardates were as good as MA-matched normals in trials to learn and reverse and as fast in their verbal response latencies. In their ratings, however, the retardates were significantly different ($p<.01$) from the normals in showing no persistent preference for either the acquisition or reversal experience; whereas the normals were consistently influenced by the reversal experience. The persistence of reversal meaning in the normal groups reveals a recency effect from which it may be hypothesized that persistence shows a developmental trend starting from no differentiation, through a preference for recency to a primacy preference. (6 refs.) - *J. C. Moody.*

Centre for the Study of Mental Retardation
University of Alberta
Edmonton 7, Canada

1251 **LIBB, J. WESLEY.** Fixed-interval frustrative nonreward in profound retardates. *Psychonomic Science*, 19(4):219-220, 1970.

The utility of a free-operant fixed-interval (FI) schedule as an assessment technique in frustrative nonreward investigations was demonstrated with 3 profoundly retarded adult males. In pulling a plunger to illuminate a panel, Ss were first consistently reinforced with candy for FI (1 minute) performance. When behavior stabilized, reward was omitted 25% of the time and responding subsequent to rewarded and nonrewarded trials was compared at 4 equidistant times across the interval. Responding was enhanced in the first 30 seconds for all 3 Ss. For one S this effect continued across the 60-second interval, while for another S the effect was evident in all but the final 15-second segment. For the third S, responding decreased considerably in the final 30 seconds. In general, the

behavior of all 3 Ss in the first 30 seconds after nonreward is consistent with frustration theory predicting response enhancement following nonreward. (9 refs.) - *J. C. Moody.*

University of Alabama
University, Alabama 35486

1252 **DREW, CLIFFORD J.; & BERARD, WALTER R.** Errors of retarded and nonretarded subjects by learning stage. *Psychonomic Science,* 20(2):65-66, 1970.

To identify the components involved in the retardate learning acquisition deficit, 24 mentally retarded Ss (IQs 55 to 72) from public school classes and 24 normal Ss (IQs 100 to 115), all between the ages of 10 and 12 years, performed a paired-association learning task. Errors committed by all Ss were classified into 4 types: extralist intrusions (ELIs), omissions (OMs), stimulus intrusions (SIs), and misplaced responses (MPRs). Analysis of variance indicated a significant ($p<.05$) interaction between retarded or normal S, error type, and stage of learning. Retardates had significantly more ($p<.01$) ELIs than nonretardates in the first block of trials but not in the second or third blocks. Retardates also had significantly more ($p<.01$) MPRs in trial blocks 1 and 2 but not in block 3. Nonretardate ELIs and MPRs did not differ significantly across trials. OMs and SIs did not differ with either learning stage or S classification. The data suggest considerable overlap between task orientation processes and the response learning stage. (8 refs.) - *J. C. Moody.*

The University of Texas at Austin
Austin, Texas 78712

1253 **ZIGLER, EDWARD.** The environmental mystique: Training the intellect *versus* development of the child. *Childhood Education,* 46(8):402-412, 1970.

The cognitive and personal development of children must be of equal concern whether a child is: of superior intellect, normal, or retarded; privileged or underprivileged; emotionally adjusted or maladjusted. Issue is taken with those who overemphasize the environmental aspect of cognitive processes and with those who hold that intelligence is essentially trainable. All differences in cognitive functioning are not due entirely to differences in environmental input. Intelligence, as such, has little to do with an individual's social competence; this is seen in the confusion found in attitudes about the deprived child, in whom resistance to communication is often mistaken for lack of intelligence. Motivation to learn is, to a large extent, an outgrowth of satisfactory relations with others, particularly adults. Many of the behaviors of a deprived or retarded child evolve from particular experiences and would be found in any child experiencing these events, irrespective of IQ or socioeconomic factors. Determinants in children's performances which are as important as cognitive ability are: a child's history of deprivation or failure; his motivation for attention and affection, which, if unsatisfied, may interfere with learning; his self-concept; and his expectation of success. (10 refs.) - *M-E. Sayre.*

Yale University
New Haven, Connecticut 06520

1254 **FASSLER, JOAN.** Performance of cerebral palsied children under conditions of reduced auditory input. *Exceptional Children,* 37(3):201-209, 1970.

Reduced auditory input was found to improve the performance of cerebral palsied children (CP), usually considered easily distractible, on tests involving: recall of missing picture, attention, and digital span. This phenomenon suggests that brain-damaged and CP children may be satiated with background auditory stimuli to such an extent that it affects negatively their intellectual, cognitive, and perceptual functioning. Hypotheses tested were that both CP and normal children will show positive change in their performance when background auditory stimuli are reduced and CP children having normal hearing will demonstrate greater improvement than non-CP children. Results, supporting the hypotheses in large measure, indicated that normal nonhandicapped children did not benefit significantly in task performance from reduced auditory stimuli, and the performance of CP children on visual-perceptual or perceptual-motor tasks remained unchanged. (21 refs.) - *M-E. Sayre.*

Teachers College
Columbia University
New York, New York

1255 **MITTLER, PETER.** Biological and social aspects of language development in twins. *Developmental Medicine and Child Neurology*, 12(6):741-757, 1970.

An examination of performance by a group of twins on a comprehensive test of language skills has shown that an overall immaturity may exist for twins, as compared to normal Ss. The experimental groups were 200 4-year-old twins (both identical and fraternal) and 100 singleton controls of comparable age and social backgrounds. A comparison of the groups on performance on the Illinois Test of Psycholinguistic Abilities (ITPA) showed that both identical and fraternal twins had an average retardation of 6 months in language development, as indicated by 8 of the 9 subtests of the scale. Multiple discriminant function and multiple regression analyses indicated that retardation of the twins on language tests was relatively greater than that revealed by nonverbal measures. Social class and family size were strongly associated with ITPA scores, with middle-class twins differing from comparable singletons. Twins and singletons from working-class families did not differ significantly on these tests although both groups were adversely affected. Abnormalities in development (including low birth weight) and reproduction had only a weak association with subsequent language abilities. (40 refs.) - *M. S. Fish.*

Hester Adrian Research Centre for the
Study of Learning Processes
in the Mentally Handicapped
University of Manchester
Manchester M13 9PL, England

1256 **PETRE-QUADENS, O.; & de LEE, C.** Eye-movements during sleep: A common criterion of learning capacities and endocrine activity. *Developmental Medicine and Child Neurology*, 12(6):730-740, 1970.

A comparison of eye movements in normal and MR Ss during sleep suggests that while frequency of movements may be an index of capacity to concentrate and to learn, the relationship may be an indirect one, primarily associated with endocrine mechanisms. Ss were 15 MR (IQ by Wechsler-Bellevue test was 30 for 11 Ss and about 60 for 4) and 7 normal (5 children and 2 adults) individuals. The MR group included cases of phenylketonuria, cystinuria, metachromatic leukodystrophy, and Prader's disorder. Analysis of electro-oculographic recordings of a total of 41,843 eye movements of the Ss during paradoxical sleep was done by placing electrodes at the center of the superior and inferior superciliary arches (for recording vertical ocular movements) and at the internal and external angles of each eye (to record horizontal ocular movements). Results showed that normal Ss had longer average duration of paradoxical sleep and registered more eye movements than did MR Ss. Frequency of eye movements was not age-dependent for MR Ss, whereas in normal Ss, oculomotor activity was greatest in the 6 to 12-year-old Ss (ages of intensive learning). MR Ss with IQ of 60 had frequencies of eye movements closer to those of normal Ss than did MR Ss with IQ of 30. Measurement of eye movements in 3 pregnant women showed that frequency of movement was sharply increased, suggesting that reciprocal interactions between endocrine and learning capacity mechanisms may exist. (30 refs.) - *M. S. Fish.*

Born-Bunge Foundation for Research
Berchem-Antwerp, Belgium

DEVELOPMENTAL ASPECTS – Social and Emotional

1257 **WEINBERG, BERND; & ZLATIN, MARSHA.** Speaking fundamental frequency characteristics of five- and six-year-old children with mongolism. *Journal of Speech and Hearing Research*, 13(2):418-425, 1970.

Comparison of spontaneous speech samples from 27 Down's syndrome children (trisomy-21) with those of 66 normals (age-matched) demonstrated higher speaking fundamental frequency (SFF) levels in the Down's syndrome Ss. Spontaneous speech (elicited by presenting a uniform series of questions, color pictures, and puzzles) was recorded, edited, and analyzed. The mean SFF for the Down's syndrome Ss was 284.5 Hz and 248.4 Hz for the normals (a significant difference). No S with Down's syndrome showed a

mean SFF level below the lowest mean level for any control. These results run counter to previous findings that Ss with Down's syndrome have substantially lower voice fundamental frequency than normals. It appears that the clinical observation that children with Down's syndrome typically have a "low-pitched voice" needs reexamination. (17 refs.) - *B. Berman.*

Indiana University Medical Center
Indianapolis, Indiana 46207

1258 **BANERJI, B. S.** Investigation about the relationship and interaction patterns of selected pairs of mentally retarded children at "Sharada." *Journal of Rehabilitation in Asia,* 11(2):41-44, 1970.

Studies of the nature and causes of relationship patterns of several pairs of MR children revealed strongly positive, emotionally structured pairships reflecting psychological, social, and physical patterns. Children were first paired on the basis of observations confirmed by teachers, then studied *via* sociograms, individual discussions, case files, and discussions with teachers. Interaction sociograms were prepared at free play, organized play, dining, music, painting, and other constructive activities. Most of the selected pairs were found to have similar interests and economic backgrounds, highly collaborative attitudes, comparable familial rearing patterns (dominating, overprotective, or rejecting parents), and about equal degrees of retardation. (No refs.) - *B. Berman.*

No address

1259 **SULZBACKER, STEPHEN I.; & COSTELLO, JANIS M.** A behavioral strategy for language training of a child with autistic behaviors. *Journal of Speech and Hearing Disorders,* 35(3):256-276, 1970.

A case history of an autistic child with communication problems illustrates the use of experimental behavioral analysis and the institution of appropriate behavior in different settings and the benefit of consistent application of procedures at school, home, and clinic through coordinated efforts of parents, teacher, and psychologist. During the first 5 months of treatment, it was necessary to establish reliable vocal and nonvocal control (by eye contact and decelerating inappropriate behaviors) before proceeding to actual speech or expressive language training (color, picture, and object naming). Treatment included behavior modification in the total environment, which entailed curtailment of disruptive behavior at home and toilet training. Placement in school required analysis and modification of typical school-situation behaviors. In subsequent speech and language training, the S was taught descriptive responses (identification and description of pictures) and functional "pivotal" phrases (responses useful in his environment, using common objects for identification). His language repertoire has expanded greatly, and he now routinely engages in essentially normal conversation. (19 refs.) - *B. Berman.*

University of Washington
Seattle, Washington 98105

1260 **THOMAS, ALEXANDER; CHESS, STELLA; & BIRCH, HERBERT G.** The origin of personality. *Scientific American,* 223(2):102-109, 1970.

A long-term study of personality development in 141 children (from 85 homogeneous, highly educated families), extending from birth to more than a decade, revealed generally a distinct temperamental individuality in children in the first few weeks of life—independent of parental style or approach—that persists over the years. Periodic interviews were held with parents, and children were periodically examined psychologically. Temperament was not immutable: environment may heighten, diminish, or otherwise modify reactions and behavior. Analysis of behavioral profiles showed clusters of traits, with 65% of the children falling into 1 of 3 categories: positive in mood, regular body functions, low or moderate intensity of reaction, and a positive approach to new situations; "difficult" children, with irregular body functions, intense reactions, withdrawing from new situations, strongly negative and slow to adapt; "slow to warm up," with a low activity level, tending to withdraw on first exposure to new stimuli, somewhat negative in mood and response. Forty-two children (mostly from the "difficult" group) required psychiatric attention. It seems apparent that the "nature-nurture" debate only confuses; what is important is the interaction between the child's native traits and his milieu. Psychiatric theory and practice must take into full account individual uniqueness

reacting to specific parental practices and environmental factors. (4-item bibliog.) - *B. Berman.*

New York University School of Medicine
New York, New York 10016

1261 NICHOLS, BRYAN. Adolescence: Normal and subnormal. *Teaching and Training,* 8(3):86-89, 1970.

For the normal and the mentally handicapped, adolescence can be a period of emotional stress and behavioral disturbances. In Western society, adolescence is a special phenomenon, with its own subculture and pressures: emotions can be intense or very variable, bitter or joyful. Problems of adult life conflict with still unresolved remnants of childhood. Serious emotional illness (schizophrenia or paranoia) is a real hazard. The healthy normal individual with average intelligence and a secure home can achieve maturity without too much difficulty; the retardate finds himself generally excluded from social participation and must find such outlets as he can—a solitary friend, parents, TV. The handicapped person has the normal psychological needs: love, admiration, and appreciation. Without these, his adjustment problems are exacerbated, and he displays maladjusted behavior completely out of character. The adolescent MR needs physical, intellectual, and emotional experiences to further his development. (8 refs.) - *B. Berman.*

Adult Training Centre
Wythenshawe, Manchester, England

1262 RUTTER, MICHAEL. Autism: Concepts and consequences. *Special Education,* 59(2):20-24, 1970.

Autism is a relatively uncommon condition occurring in about 3 or 4 children in every 10,000, four times more often in boys, and chiefly characterized by difficulty in forming relations with other people, various ritualistic and compulsive phenomena, and severe language retardation (faulty central information processing). IQs range from untestably low to normal or even above normal, and intellectual functioning shows great variability (probably related to language development). The autistic child tends to be very good at some activities and very poor at others. A followup study of 63 autistic children at Maudsley Hospital, London, left no doubt that many autistic children can be educated, and suitable schooling should be provided. The nature of the education must be based on the consequences of their handicaps. Factors in autism showing an important association with social adjustment are IQ, language development, severity of disorder, and schooling. (No refs.) - *B. Berman.*

London University
London, England

1263 L'avenir des handicapes mentaux: Quelques reflexions personnelles apres une conference internationale (The future of the mentally handicapped: Some personal thoughts after an international conference). *Amentia,* 22(October):11-19, 1970.

Conferences held in Rome, La Turbie, and San Sebastian dealt with the problems of social integration of the MR, particularly from a sexual viewpoint. The uneasiness at these conferences reflected the complexity of the problem. Integration should begin with full acceptance by the parents, which is in many cases lacking or unsoundly achieved. The MR has to discover his sex and the value of his own, unique personality. The handicapped look most of all for protection, security, and affection. This is normally to be found in marriage. Most MRs, even if physically mature, are considered by their parents and educators as not suited for marriage. Yet most handicapped want to marry, for various though often superficial reasons, and feel frustrated if they cannot. The problem is to help all the handicapped who might be capable of marrying to reach maturity, in spite of all prejudices and social barriers. Since sexuality, broadly speaking, implies some creation, all MRs should be helped to achieve some kind of satisfactory creativity in the artistic field, dance, and service to others; such activities should be performed as much as possible, in sexually mixed groups. (No refs.) - *G. Van Massenhove.*

1264 RAMOS LAMPREIA, MANUEL; & SINATRA GOMES, GRAZIELA. Algumas consideracoes sobre as deficiencias instrumentais na actividade simbolica (Some

thoughts on the instrumental deficiencies in symbolic activity). *Revista Portuguesa para o Estudo da Deficiencia Mental*, 1(3):265-271, 1970.

Symbols as a means of communication are mostly perceived and expressed through language. MR takes away, to a large extent, the necessary instruments of symbolic activity. Symbolic understanding is developed in a sound family environment, even before speech; also the proper sensorimotoric equipment, normally a prerequisite to conceptual activity, is important. Since speech defects can have many causes and degrees, one must distinguish between the articulate and conceptual aspects of speech defects and relate them to the symbolic activity. Re-education techniques to remove or to reduce instrumental deficiencies include the psychomotor method "Bon depart," the gestural method of Borel - Maisonny, and the relational practice of Chassagny. (20 refs.) - *G. Van Massenhove.*

No address

1265 **DOS SANTOS, JOAO; & DE SA, CABRAL.** Deficiencias sensorias e dificuldades do rendimento intelectual (Sensorial deficiencies and difficulties of intellectual performance). *Revista Portuguesa para o Estudo da Deficiencia Mental*, 1(3):243-246, 1970.

The psychic activity of an individual consists of assimilation and accommodation of data from the environment. The means of perceiving this environment and referring the self to it (feedback) is sensorial perception, and any deficiency therein influences the psyche and, normally, the intellectual function. The primary object of the child's perception and reference is the mother, and every re-education of sensorially deficient children should start here. The proper attitude of the mother is essential. If she is overprotective, the child feels watched constantly and hindered in the exercise of the autonomous functions of the ego. If a repressed guilt feeling makes the mother reject the child, the child feels isolated and fearful and might become psychotic. In either case, the child does not feel encouraged to experiment and try to compensate for the insufficiency of one of his senses by developing the others more. Many psychic disturbances are due to a feeling of being enclosed in the self with insufficient relation to the environment and of having to repress normal urges. Five case histories illustrate these views. (No refs.) - *G. Van Massenhove.*

Centro de Saude Mental Infantil
Lisbon, Portugal

1266 **ADELMAN, HOWARD S.** Learning problems: An interactional view of causality (Part I). *Academic Therapy*, 6(2):117-123, 1970.

The interactional view of learning and behavior problems in children is that success or failure results from interaction between the child and school-program characteristics, his strengths and weaknesses, and specific classroom situations. The categories into which such children are grouped (learning disabled, emotionally disturbed, and educationally handicapped) are heterogeneous in etiology and involve various subgroups embracing understanding or use of language, maladaptive societal behaviors, and neurological handicaps. Many children have been tagged with labels of questionable "postdictive" value, with restricting emphasis on a "disordered child" syndrome; an alternative view now stresses the "interactional" elements of child and school. Classrooms vary critically in personnel, procedures, goals, and materials (states vary in their classification of these children) with consequent differing effects on personality and intellectual development. The evidence is that the greater the congruity between a child's make-up and the school-program elements, the greater is his likelihood of success. (No refs.) - *B. Berman.*

University of California
Riverside, California

1267 **BRYSON, CAROLYN Q.** Systematic identification of perceptual disabilities in autistic children. *Perceptual and Motor Skills*, 31(1):239-246, 1970.

A study of the ability of autistic children to respond to visual and auditory stimuli with visual, vocal, and motor responses suggests that the method may be applicable for the construction of profiles of perceptual dysfunction in other low-functioning children. Tests of the Ss, 6 children (5 male and 1 female), classified as autistic, consisted of 2-choice matching-to-sample

problems of 9 separate types: visual-to-visual, visual and auditory-to-visual, auditory-to-visual, auditory-to-vocal, auditory and visual-to-vocal, visual-to-vocal, visual-to-fine motor, visual and auditory-to-fine motor, and auditory-to-fine motor. Results showed that perceptual deficits were heterogeneous for the group with individual patterns, abilities, and difficulties appearing. Fine motor performance was poor for 4; however, the other 2 were older and had had considerably more training. This latter observation is counter to the frequent description of autistic children as having well-developed fine motor skills. The data further suggest a deficit in ability to make specific cross-modal associations which are required for continued development rather than lack of processing auditory and visual information. (9 refs.) - *M. S. Fish.*

Indiana University Medical Center
Indianapolis, Indiana 46207

1268 **BEGLEY, JON C.** Overt behavior variables in educationally handicapped children, by higher IQ and lower IQ. *Journal of Learning Disabilities*, 3(8):400-403, 1970.

When teachers rated the overt behavior (Burke Behavior Rating Scales) of 96 pupils in classes for "exceptional children" it was noted that the educationally handicapped with low IQ (80-89) were seen as more immature, more hostile-aggressive, and more neurotic than the handicapped children with higher IQ (105-125). The most significant specific differences were excessive withdrawal, dependency, and suffering in the low IQ group. It is suggested that the qualitative differences between these two groups of educationally handicapped children are great enough to warrant separate programs and that marginal IQ children have behavioral problems similar to those of MR children and may be better handled in programs geared to the MR. (6 refs.) - *E. L. Rowan.*

2550 Aster Street
San Diego, California 92109

1269 **BEECKMANS-BALLE, M.** Psychose infantile et syndrome d'autisme (Childhood psychosis and infantile autism). *Acta Paediatrica Belgica*, 24(3-4):301-308, 1970.

In regard to childhood psychoses, 2 diametrically opposed theories exist: a purely organic etiology (neurological lesions or encephalopathy) and an exclusively psychogenic basis. A multidimensional approach which takes into account the special problems of a patient is preferred. Infantile autism is a nosological entity which may be differentiated from the general group of childhood psychoses. The epidemiological findings in 18 autistic children (CA range from 2 yrs 8 mos to 12 yrs 11 mos) are compared with the data reported in the literature. This communication is the precursor of a more systematic study to be undertaken with the Laboratory of Medical Genetics. (19 refs.) - *K. Baer.*

Free University of Brussels
Brussels, Belgium

1270 **LOVELL, K.; HERSEE, D. E.; & PRESTON, B. M. A.** A study of some aspects of language development in educationally subnormal pupils. *Journal of Special Education*, 3(3):275-284, 1969.

Eighteen children (CA 8 to 10 yrs) in an English educationally subnormal special school were examined for usage of syntax and the capacity to recognize the syntactic similarity of words. Three stimulus situations were used to elicit speech patterns for observation. Syntactic similarity was judged by insertion of a nonsense word into a sentence, followed by the allocation by the Ss of a familiar word either correctly to the same part of speech as the nonsense word or incorrectly to another part of speech. The test of syntactic similarity was also administered to some older EMR pupils. Syntax testing showed that the passive, pronominalization, reflexive, iteration, and nominalization transformations were utilized infrequently. In both syntax and syntactic similarity testing, the performance of special school pupils seemed to be equivalent to that of normal children who were much younger. While it is not possible to state the cause of the low level of language development in these pupils, it is feasible that their slow intellectual growth is responsible. Further information on the influences affecting language development in young normal children is needed to determine appropriate procedures to aid the growth of language in subnormal pupils. (11 refs.) - *B. J. Grylack.*

University of Leeds
Leeds, England

1271 **SWANSON, DAVID W.; & STIPES, ALBERT H.** Psychiatric aspects of Klinefelter's syndrome. *American Journal of Psychiatry*, 126(6):814-822, 1969.

Examination of case studies and reports of individuals with Klinefelter's syndrome (a chromosomal abnormality characterized clinically by hypogonadism) indicates that inability to adapt, low social drive, lack of exploratory behavior, and emotional instability are typical psychiatric disorders which are present in many cases. Intelligence impairment is not a consistent finding and is usually mild when present. The general incidence of the abnormality, caused by the presence of an extra X chromosome, is approximately 1:450 males. The incidence of diagnosable mental disorders among these patients is about one-third; however, in institutionalized Ss the incidence of neuropsychiatric disorders approaches 100%. In such subjects the incidence of psychosis is increased, and neurotic disorders appear to occur even more often. Various types of personality disorders, including sociopathic behavior, appear to be the most frequent psychological manifestation. Whether these problems are a result of direct influence of the extra X chromosome on the nervous system or an indirect metabolic effect (e.g., the feminine appearance due to differences in secondary sexual characteristics as compared with normal males) is unknown. Therapeutic approaches may involve androgen replacement, occasionally surgical correction of gynecomastia, and supportive or re-educative psychotherapy. Protective settings are helpful for retarded Ss with the syndrome. (31 refs.) - *M. S. Fish.*

Loyola University of Chicago
Maywood, Illinois 60153

1272 **NIELSEN, JOHANNES.** Criminality among patients with Klinefelter's syndrome and the XYY syndrome. *British Journal of Psychiatry*, 117(539):365-369, 1970.

A record of criminality (especially sex crimes and arson) was found in 34 of 61 Ss with Klinefelter's syndrome and 11 of 12 Ss with an XYY syndrome. Diagnosis was made by sex-chromatin examination of buccal smears and chromosomal analysis of leukocyte cultures. Mean IQ of the 34 Klinefelter Ss with criminal records was 89.3 and 90.9 in the 27 with no criminality. The 11 XYY cases had a mean IQ of 96; 1 with no criminality had an IQ of 94. There were no EEG abnormalities in any patient. Pathogenesis of these syndromes is unknown, although the chief causative element in personality deviation and in criminality is surplus chromosomal material. The pattern of violence and criminality these individuals display is very much like that in MR and, to some extent, reflects immaturity, social clumsiness, and the inaccessibility of female partners. Psychiatric treatment is required for genetically disposed criminals. (11 refs.) - *B. Berman.*

Arhus State Hospital
Risskov, Denmark

1273 **BALLINGER, BRIAN R.** The prevalence of nail-biting in normal and abnormal populations. *British Journal of Psychiatry*, 117(539):445-446, 1970.

A high incidence of nail-biting found in a normal population (803), a MR hospital (631), and a psychiatric hospital (598), suggests that nail-biting has little symptomatic psychiatric significance. Normals and defectives showed a peak incidence in the second decade and a progressive decline after age 40, somewhat more noticeable among the mentally ill and retarded. Within the MR hospital, a significantly lower rate was found among those with IQs 0-19, and a significantly higher rate in those with IQs 68 and over. In the psychiatric hospital, differences among various diagnostic categories were largely age-related. The low rate among the low-IQ group may reflect developmental level and frequent lack of teeth. (5 refs.) - *B. Berman.*

Royal Dundee Liff Hospital
Dundee, England

1274 **GARRONE, GASTON; & *GUIGNARD, FLORENCE.** Some psychopathologic and socio-cultural aspects of slight mental retardation (Quelques aspects psychopathologiques et socio-culturels des deficiences intellectuelles legeres). *Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen*, 28(4):329-339, 1969.

The socio-economic and cultural family situation, psycho-motor properties, language ability, intelligence and performance, and personality organization were compared in a study of 10 normal

children and 10 children with slight mental retardation of unknown derivation. The children, of both sexes, were 11 and 12 yrs old. Preliminary results reveal, in all the slightly retarded children, a modification of psychological organization which affects various aspects of the personality: intelligence, psycho-motor properties, language, and affective organization. To date, however, these difficulties are not attributable to any common causal factor. (14-item bibliog.) - *K. Baer.*

*4 Place Neuve
1200 Geneva, Switzerland

1275 **KNIGHT, OCTAVIA B.** The self-concept of Negro and white educable retarded boys. *Journal of Negro Education,* 38(2):143-146, 1969.

A specially designed questionnaire (to elicit information reflecting self-concepts) administered to 2 groups of EMRs (40 Negro boys and 43 white boys matched for IQ, MA, CA, and socioeconomic level) revealed no significant differences in self-concepts. The same degree of positive self-satisfaction was found in regard to fathers' occupations and self-liking. Despite these findings, it is felt there are differences between the 2 groups: their self-concepts are probably based on different standards and values, as well as different societal expectations. (13 refs.) - *B. Berman.*

North Carolina College
Durham, North Carolina

1276 **KAHN, J. P.** The emotional concomitants of the brain-damaged child. *Journal of Learning Disabilities,* 2(12):644-651, 1969.

In the child with minimal brain damage or dysfunction, neurological and psychological elements cannot be separated: the child has a different emotional and conceptual view of reality. Most frequent neurological irregularities found in such brain-damaged children involve fine and gross coordination, perceptual and visual-motor function, strabismus, reading, mixed laterality, and speech disabilities. Psychological concomitants include hyperkinesis, excessive motor activity, mood lability, disorganization, severe anxiety, and increased need for human support, especially a close maternal association. Frequently, changes in emotional state imply cortical-subcortical dysfunction. These children must be rigorously differentiated from schizophrenics, and their educational deficits must be treated through a sympathetic and understanding amalgam of child, teacher, and methodology. Parental response (varying from realistic acceptance to smothering overprotectiveness, to complete rejection) must be viewed in the context of social pressures and conformity and availability of community resources. The most effective psychotherapy for the child may be to meet his special educational needs through realistic and sympathetic instruction. (6 refs.) - *B. Berman.*

3261 Clay Street
San Francisco, California 94115

1277 **CREEK, LEON VANDE; & BATH, JOHN.** A preliminary view of trends in age, education, and intelligence of problem youth. *Journal of Genetic Psychology,* 117(2):219-225, 1970.

A study of neglected, dependent, and delinquent youths admitted to a juvenile home in 1957, 1962, and 1967 showed that the average IQ, age, and grade placement in school increased significantly over the 10-year period. The Ss were 332 children, ages mostly between 12 and 17 years, who were admitted to a juvenile home in 1957 (104), 1962 (91) and 1967 (137). No major changes in home environment occurred over this period; however, Ss admitted in 1967 had intelligence comparable to that of normal school pupils, with a large increase of admissions falling in the IQ range of 120 and above. The trends indicate the need for different educational and vocational training approaches, particularly since the average age of the Ss has been increasing along with the average IQ. The results suggest that factors other than those of intelligence and education may be related to juvenile problems, and are in contrast to results from previous studies which indicated that delinquents generally averaged about a year's retardation mentally. (17 refs.) - *M. S. Fish.*

Tri-State College
Angola, Indiana 46703

DEVELOPMENTAL ASPECTS – Psychodiagnostics

1278 **RICE, JAMES A.** Abbreviated Gordon Musical Aptitude Profile with EMR children. *American Journal of Mental Deficiency*, 75(1):107-108, 1970.

Reliability coefficients on the scale of the Musical Aptitude Profile were of sufficient magnitude to warrant its use for the selection of EMR children for musical training and encouragement. Three of 7 scales on the tests were administered to 39 EMRs (mean CA 139 mos; mean MA 101 mos), and 33 of these were retested 1 month later. Split half and test-retest reliability coefficients were .83 and .70 for the Rhythm scale, .82 and .56 for the Melody scale, and .88 and .63 for the Expression scale. Musical aptitude appeared to be generally independent of measured intelligence. (1 ref.) - *J. K. Wyatt.*

University of Houston
Houston, Texas 77004

1279 **LARROUDE, MANUELA.** Audiometria: Suas possibilidades e limitacoes (Audiometry: Its possibilities and limitations). *Revista Portuguesa para o Estudo da Deficiencia Mental*, 1(3):233-241, 1970.

Audiometry, its various categories, and the different types of instruments used are outlined. The 3 types of deafness (transmission, perception, and mixed) are described, and the diversity of audiometric records related to each type is pointed out. Practical hints, based on psychological observation, about audiometric tests for children are provided, and the difficulties encountered in differential diagnosis are described particularly when Ss suffer not so much from deafness but rather from aphasia, MR, or autism and other psychic disturbances. Thus, the audiometric test, by itself, is of little value, and its significance can only appear if it is included in a detailed anamnesis. This can be properly achieved only through collaboration of a team of pediatricians, child psychiatrists, otologists, psychologists, and audiologists. (No refs.) - *G. Van Massenhove.*

Instituto de Audio-fonologia
Lisbon, Portugal

1280 **MUSGROVE, WALTER J.** Comparisons of low socioeconomic black and white kindergarten children. *Academic Therapy*, 6(2):163-167, 1970.

Comparison of performance of economically and culturally deprived black and white kindergarten children on 3 reliable and valid tests (Draw-a-Man Test and Wechsler Preschool and Primary Scale of Intelligence Geometric Design and Information Subtests) showed no statistically significant differences. The study population was the entire kindergarten center enrollment (92 whites, 86 blacks), with children randomly assigned to their classes, with no race or sex distinction. Tests were administered individually by the child's teacher, who received special instruction for the testing. Results support the idea that experimental and environmental similarities (even with some genetic differences) will give consistent performance – regardless of race or sex – at least until the first grade. After that, varying educational and social experiences (slanted in favor of white children) produce increasingly greater statistical differences in test results. Teaching methods (with the sensorially affected, the learning-disabled, or the retarded) must be keyed to a child's capacities and needs. (3 refs.) - *B. Berman.*

University of South Florida
St. Petersburg, Florida

1281 **ARENA, THOMAS.** Social maturity in the prediction of academic achievement. *Journal of Educational Research*, 64(1):21-22, 1970.

Fifty-two fourth grade children were tested to determine their intelligence level in relation to social maturity and academic achievement. Results of computation of standard tests involving academic achievement, mental maturity, and social maturity are reported in terms of academic age, MA, and social age. A highly significant relationship exists between MA and academic achievement, while the correlation between social maturity and the mental maturity and academic achievement variables is moderate.

A decrease from .791 to .759 in the correlation coefficient between academic age and MA reveals the relatively small but measurable influence exerted by social age. The social maturity of normal children is not significant in the prediction of academic success. Since teaching objectives and procedures can be established more accurately when the probable achievement levels of pupils are known, other factors must be investigated further in order to ultimately resolve the problem of prediction. (1 ref.) - *B. J. Grylack.*

Slippery Rock State College
Slippery Rock, Pennsylvania

1282 **KILPATRICK, DEAN G.** The Halstead category test of brain dysfunction: Feasibility of a short form. *Perceptual and Motor Skills,* 30(2):577-578, 1970.

A short form of the Halstead Category Test might be developed into a useful tool for the psychologist in indicating brain dysfunction. Of 41 Ss tested with this subset of the Halstead-Reitan Neuropsychological Test Battery, 31 had been referred for diagnostic evaluation, and 10 were staff members and trainees who were tested to provide norms. The group (33 males and 5 females, CA 16 to 76 yrs, IQ 58 to >140) was administered this test of 208 stimulus figures by means of a slide projector. Product-moment correlation for errors on odd items and total errors was 0.90 and on even items and total errors, 0.99; the split-half correlation was 0.97. These results suggest the feasibility of development of a short form of the test, either of odd items or even items, in order to decrease the amount of professional time required in the administration and scoring of the test. (8 refs.) - *M. S. Fish.*

University of Georgia
Athens, Georgia

1283 **BURGESS, MICHAEL M.; KODANAZ, ALTAN; ZIEGLER, DEWEY; & GREENBURG, HOWARD.** Prediction of brain damage in two clinical populations. *Perceptual and Motor Skills,* 30(2):523-532, 1970.

In the differentiation of brain-damaged from non-brain-damaged individuals, sensory motor measures are more predictive than are intellectual measures of both psychiatric and neurological populations. Of a total population examined for 4 criteria (18 years of age or older, eighth grade education, right-handedness, and ambulatory), 76 neurological and 92 psychiatric patients were selected and examined by 12 sensory motor variables (chosen from the Bender-Gestalt, Trail Making, Memory for Designs, Minnesota Percepto-Diagnostic, Revised Verbal Retention, and Purdue Pegboard tests) and 15 intellectual variables (chosen from the Wechsler Adult Intelligence Scale). Results indicated that brain damage, measured behaviorally, was consistent across the 2 populations and that false positives occurred more frequently with psychiatric patients than with the neurological Ss. The findings suggest that correlation of treatment programs with identifiable behavioral deficiencies may be indicated. (16 refs.) - *M. S. Fish.*

University of Missouri
Kansas City, Missouri

1284 **BRENNAN, W. K.; & HERBERT, D. M.** A survey of assessment/diagnostic units in Britain. *Educational Research,* 12(1):13-21, 1969.

An examination of present and projected patterns of assessment and diagnosis of handicapped children in a number of units suggests the following conclusions: rather than assessment and diagnosis, the units are more helpful in school placements; additional professional support is required; assessment by measures less involved than those of the units could place many of the children; observation and training should not be interrelated and long-stay Ss should be reviewed, workers from junior training centers should participate; admission policy and placements relate to the site of the units; psychotic children need special provisions; units and receiving schools need better communication; and more research is required. Of 1,007 handicapped children studied, 1,507 reasons for referral were given and 1,242 referrals were actually made. Assessment was completed for 738 Ss, and of these, 147 had been in their units for over 2 years — a protracted assessment period, particularly since 80% of the Ss was over 5 years of age on admission. IQ measurement was not reliable for the population. Results indicate that while the units cannot make appropriate diagnosis of the needs or recommendations regarding useful programs, they do aid

considerably in the placement and the adjustment of the child to a school regimen. (18 refs.) - *M. S. Fish.*

Cambridge University Institute of Education
Cambridge, England

1285 **FRIEDRICH, DOUGLAS; FULLER, GERALD B.; & HAWKINS, WILLIAM F.** Relationship between perception (input) and execution (output). *Perceptual and Motor Skills,* 29(3):923-934, 1969.

A comparison of brain-damaged and non-brain-damaged institutionalized MR Ss on performance of visual-motor tasks indicated that failures of the Ss result from faulty components of execution or integration and tended to negate the belief that perception is a unitary process. Tests of 24 institutionalized MR Ss divided into 2 categories: 15 brain-damaged Ss (10 male, 5 female; mean CA 17.77; mean IQ, 50.93) and 9 non-brain-damaged Ss (5 male, 4 female; mean CA, 16.82; mean IQ, 67.67) and utilizing the Block Design subtest to the Wechsler Intelligence Scale for Children (WISC), a WISC Block Design multiple choice procedure, and the Minnesota Percepto-Diagnostic (MPD) test with circle-diamond figures, indicated that the Block Design subtest and the circle-diamond figures showed the presence of motor or integrative dysfunctions. The multiple choice subtest did not differentiate Ss with integrative dysfunctions from those with visual perceptual problems. Factors other than faulty perceptual input may be primarily responsible for the failure of the Ss on visual-motor tests. (21 refs.) - *M. S. Fish.*

Central Michigan University
Mount Pleasant, Michigan

1286 **WALTI, ULRICH.** Zur Problematik einer testmassigen Erfassung des psychischen Entwicklungsstandes bei psychomotorisch retardierten Kindern (A contribution to the problem of testing the state of psychic development in children suffering from psychomotor retardation). *Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen,* 29(3):430-433, 1970.

Traditional development scales are based on operational comparisons of individual data with standards for the age group concerned; however, results obtained by such tests correlate poorly, or not at all, with the results of later intelligence tests. A more reliable diagnostic system has been developed by Mark of Johns Hopkins University; it tests the total cognitive power of individuals by the methods of system analysis – a method which is fixed in each case to such an extent that technicians may be entrusted with administering the tests. The utility of the "Mark system" is being further investigated. (1 ref.) - *K. Baer.*

Universitets – Kinderklinik
Bern, Switzerland

1287 **LUTHI, F.** Normwerte fur den Reyschen Kopie- und Reproduktionstest zur Erfassung von organischen Hirnschaden bei Kindern (Normative values of the Rey copying and reproducing test to establish organic brain damage in children). *Acta Paedopsychiatrica,* 37(4/5):118-136, 1970.

One hundred and twenty physically and mentally healthy children whose ages ranged from 6 to 11 years and whose intelligence was normal were tested by means of the HAWIK (Hamburg-Wechsler Intelligence Test for Children) and Rey (test of copying and reproducing a complex figure) tests. The procedure and criteria for selecting the sample and the performance of the test are described, as well as some of the evaluation criteria. The results, which may be considered normative values, are presented in tables, and are compared with those obtained by other authors. An attempt is made to interpret the constellations (profiles) observed in the Rey test; the question of their dependence on IQ is discussed, and a few "gestalt" phenomena of the figure as a whole are pointed out. (10 refs.) - *K. Baer.*

Kinderpsychiatrische Poliklinik
Basel, Switzerland

1288 **BZOCH, KENNETH R.; & LEAGUE, RICHARD.** *Assessing Language Skills in Infancy.* Gainesville, Florida, Tree of Life Press, 1971, 56 p.

This handbook for the multidimensional analysis of emergent language in infancy is derived from the REEL (Receptive-Expressive Emergent Language) Project, a longitudinal investigation that

provided an empirical basis for an instrument to measure the dimensions of emergent language. Utilizing a sample of 50 normal infants from enriched linguistic environments, the study defined the language behaviors regularly displayed under "ideal" conditions and used them as the basis for a scale to test achievement of language skills in infancy. Designed to meet the needs of pediatricians and child psychiatrists for differential diagnosis of language-development disorders and knowledge of how poverty and environmental deprivation influence early language growth, the REEL Scale emphasizes the 3 processes of language development — receptive, expressive, and inner language — and is grounded on 3 premises regarding language function: primacy of auditory modality learning, innateness of language capacity, and the inseparable interconnection of speech behavior and cognitive development. Assessment of language skills requires an understanding of the definable stages during the first 3 years of life, each stage emerging in a sequentially predictable pattern. The handbook provides instructions for administering and scoring, and guidelines for interpreting the REEL Scale. It also furnishes a discussion of the theoretical model and the actual mechanics (rationale, reliability, validity) of the scale's construction. A glossary of definitions provides an objective base for administration and scoring. (29 refs.) - *B. Berman.*

1289 **GARDNER, JAMES M.; & GIAMPA, FRANKLYN L.** Behavioral competence and social and emotional behavior in mental retardates. *American Journal of Mental Deficiency,* 75(2):168-169, 1970.

Two Ss randomly selected from each of 3 institutionalized retarded groups (moderate, severe, profound), observed during a structured recreation period, showed no significant differences in SEBs (social and emotional behavior) — screaming, hitting, etc. Correlation between social age and SEBs (.09) was without significance, indicating that inappropriate social and emotional behavior is independent of behavioral competence. Since success in any training program is a function of behavioral competence and control, the currently used unidimensional measures (IQ and SA) are not adequate for individual therapeutic programming. Social and emotional behavior components need independent assessment, in addition to the areas of behavioral competence. (5 refs.) - *B. Berman.*

Orient State Institute
Orient, Ohio 43646

1290 **OWENS, EARL P.; & BOWLING, DONALD H.** Internal consistency and factor structure of the preschool attainment record. *American Journal of Mental Deficiency,* 75(2):170-171, 1970.

Analysis of performance of 100 retardates (CA, 28-150 mos) at the Pacific State Hospital on the Preschool Attainment Record (PAR) revealed that the internal consistencies on the instrument's 8 subtests appeared sufficiently high, suggesting that PAR is adequate for measuring development in retarded children. Factor analysis indicated that, with this population, the test apparently measured physical-developmental and social-intellectual factors. Additional study with normal children is needed to verify the test's factor structure. (8 refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California 91768

1291 **REARDON, DIANE McG.; & BELL, GRAHAM.** Effects of sedative and stimulative music on activity levels of severely retarded boys. *American Journal of Mental Deficiency,* 75(2):156-159, 1970.

Testings of 11 severely retarded institutionalized boys (IQs, 9-55; CA, 6-17 years) for the effects of musical stimulation on activity level demonstrated lower activity levels during the more stimulating conditions. Three college students administered a time-sampling schedule permitting individual observations and checking on 14 behaviors under 4 experimental conditions: sedative music, stimulative music, spoken version of Pinocchio, and no recording (control). Much of the subjects' behavior consisted of continuous, nonpurposive, repetitive movements. The first comparison — to determine activity-level differences due to any auditory stimulus — revealed more activity with no recording than during the average recording sessions. Comparison of activity levels during the playing of sedative and stimulat ing music showed more activity during the sedative music. Overall comparison of all 4 conditions showed no significant differences. In a separate series of 12 tests, there were no significant differences in activity scores between the spoken

recording and any other recording condition. Findings do not support the "drive " concept that stimulation increases activity among retardates, or that sedative music calms. Apparently, any new experience will reduce activity level among retardates until adaptation occurs. (7 refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California 91768

1292 **BROWN, ANN L.** Subject and experimental variables in the oddity learning of normal and retarded children. *American Journal of Mental Deficiency,* 75(2):142-151, 1970.

Two experiments in oddity learning are reported. Experiment I, utilizing 5 groups of experimentally naive children, demonstrated an attentional deficit in retardate performance in an analysis of comparative performance by retarded and bright Ss and their normal MA and CA peers. Three sets of stimulus materials (animal pictures) were used for pretraining, and, for the oddity training, 2 sets of pattern stimuli (geometric and life forms). Surprisingly, learning the relational oddity concept was considerably more difficult for mild retardates than for their normal MA or CA peers, even though all Ss in the oddity sessions had previously succeeded with the verbal-oddity items of the Stanford-Binet and other tests; the poor performance of MRs was attributed to inadequate attention. In Experiment 2, the number of retardates reaching criterion equalled the number of the MA-matched comparative group of normals in the first experiment. This was a result of special training with 3 attention-engineering devices, which increased the number of identical stimuli in an array to increase the probability of S's observing the oddity relationship and the vehicle dimension. Focusing the attention of retarded children on the task's relevant aspects increased the probability of successful performance. (17 refs.) - *B. Berman.*

University of Connecticut
Storrs, Connecticut

1293 **JOHNSON, JOHN T., JR.; & SOWLES, CATHIE N.** Proactive and retroactive inhibition as a function of intelligence. *American Journal of Mental Deficiency,* 75(2):130-134, 1970.

An analysis of 60 school children of similar chronological age – 20 in each of 3 IQ groups: 60-80 (low), 90-110 (average), 120-140 (high) – showed no differences among the groups in proactive interference, but some evidence of relatively greater retroactive interference in the average group. Two lists, each containing 8 pairs of familiar nouns of low association value, were used: each S learned one list, then the second, and then relearned the first. The low group, on the first learning, required significantly more time to reach the criterion than did the other groups. However, there was no strong support for an inhibition deficit among the MRs: their inferiority in learning the first list did not change differentially in learning the second list. The high and low groups maintained about the same difference in original learning and relearning. Errors made by the retardates were task-specific– responses learned within the experimental situation. (15 refs.) - *B. Berman.*

Memphis State University
Memphis, Tennessee 38111

1294 **RICE, JAMES A.; & DOUGHTIE, EUGENE B.** IQ and the ITPA: Classification versus diagnosis. *Journal of Learning Disabilities,* 3(9):471-474, 1970.

The nature of intelligence has not yet been satisfactorily explained, but it is apparent that IQ is not synonymous with intelligence, is not immutable, and shows varying correlations with achievement. In view of these ambiguities, a reading disability, or any other learning disability, should not be arbitrarily attributed to "low intelligence." This is illustrated in the case of Joe, a slow, quiet Negro boy enrolled in a Head Start program, whose Stanford-Binet score was 69, classifying him as retarded. His unusual auditory memory led to testing on the ITPA (Illinois Test of Psycholinguistic Abilities) on which he scored a language quotient of 98. After a period of praise, reassurance, and experience in situations that utilized his extraordinary memory, he was retested on the Stanford-Binet and scored 98. This illustrates the vulnerability of traditional intelligence testing and its misuse as a convenient classificatory device to remove behaviorally deficient children from regular classrooms. (2 refs.) - *B. Berman.*

University of Houston
Houston, Texas

1295 **KOPPITZ, ELIZABETH M.** Brain damage, reading disability, and the Bender Gestalt Test. *Journal of Learning Disabilities*, 3(9):429-433, 1970.

The Bender Gestalt Test is useful in the diagnosis of brain damage in children only if it is used in conjunction with other test data and information. In interpreting the test, one must consider other data besides the test score; how did the child copy the designs; what were his behavioral attitudes (anger, fear, frustration, etc.)? Psychologists and educators should be more concerned with a child's actual functioning and manifest problems than with diagnostic labels. Again, the test, used correctly, is useful in revealing problems in visual-motor perception and impulse control but it cannot indicate their etiology. The test is often used in screening school beginners for potential learning and reading disabilities, although it has been shown to be more closely related to overall school functioning and arithmetic reasoning. Reading is more complex than merely drawing Bender designs. It requires use of language and memory, translation of visual patterns or perceptions into sound patterns, and then further translation into the motor activity of spoken words. Reading problems result from various disorders, some of which the Bender may reveal, and the child should be examined for visual, auditory, written, and oral malfunctioning. (17 refs.) - *B. Berman.*

Board of Cooperative Educational Services
Yorktown Heights, New York

1296 **BOWERS, LOUIS.** Locomotor development test. *Challenge*, 5(2):9, 1969.

Since MRs display significant deficiency in ability to move the whole body while shifting from one foot to another or to jump and land with control, a test is described which evaluates and diagnoses locomotor performance of MR children. Easily understood and administered, the test consists of footprint patterns arranged in a sequence of locomotor skills following patterns observed in young children. The locomotor skill to be tested is first demonstrated by the administrator and is scored on the basis of whether it can be performed at all by the child, and then checked for ease of maintaining balance and control while moving. Average age at which most children perform the specific skills was validated with 183 normal children, ages 3-8 years. (No refs.) - *B. Berman.*

University of South Florida
Tampa, Florida 33600

1297 **REED, JAMES C.; & REITAN, RALPH M.** Verbal and performance differences among brain-injured children with lateralized motor deficits. *Perceptual and Motor Skills*, 29(3):747-752, 1969.

Administration of the Wechsler Intelligence Scale for Children (WISC), the Wide Range Achievement Test (WRAT), and a battery of neuropsychological tests to 2 groups of infantile hemiplegiacs (35 children with right hemiplegia, and 25 with left hemiplegia) revealed no significant differences in scores between the groups. There were no systematic differences in verbal or performance IQ correlated with the lateralized motor deficit, although in each group the performance score was lower than the verbal. The literature suggests that, in adults with recent neurological complaints, WISC scores may aid in lateralizing the lesion; this does not appear to apply to brain-damaged children. (12 refs.) - *B. Berman.*

Tufts University School of Medicine
Boston, Massachusetts 02111

1298 **BATEMAN, BARBARA.** "Clinically" obtained IQs versus "production line" IQs in a mentally retarded sample. *Journal of School Psychology*, 7(1):29-33, 1969.

Administration of the Stanford-Binet L-M to 135 MR children (mean CA 12 yrs; mean IQ 51) under standard "clinical" and "production-line" conditions revealed an average difference of less than one-half point in the 2 sets of scores and demonstrated that reliable and valid results are obtainable under conditions of great time pressure and physical discomfort to both child and tester. "Production-line" conditions included a high noise level, extreme heat, poor lighting, and improper table and chair size. The Binet, plus 8 other tests, were given to each child in 2 hours and 15 minutes. All the testers were thoroughly trained and experienced. A questionnaire on the procedures used in these testings sent to 120 school psychologists indicated that they thought an average of 44 minutes was needed to give the Binet itself and at least a 5-point difference would result under adverse conditions. In fact,

however, all testers felt that the adverse conditions did not hinder making clinical judgements while testing and the importance of "establishing rapport" has been grossly overestimated. (No refs.) - *B. Berman.*

University of Oregon
Eugene, Oregon 97403

1299 Products. *Journal of Learning Disabilities,* 3(7):383-384, 1970.

The new Bayley Scales of Infant Development are described. These scales are based on Dr. Bayley's 40 years as a psychologist, including work with earlier versions of her scales. The new scales should be helpful in detecting mental retardation, sensory deficit and neurologic defects at an early stage and in research on early human growth and maturation. There are 3 scales: a mental scale evaluates sensory-perceptual abilities, early attempts at vocalizations and communication, and memory and learning; a motor scale measures muscle control; an infant behavior record rates the child for cooperativeness, fearfulness, interest in persons and things, general emotional tone, and other aspects of personality. The mother or a substitute should be present during testing. (No refs.) - *E. Kravitz.*

1300 **NICHOLSON, CHARLES L.** Correlations among CMMS, PPVT, and RCPM for cerebral palsied children. *Perceptual and Motor Skills,* 30(3):715-718, 1970.

Although the Peabody Picture Vocabulary Test (PPVT), the Columbia Mental Maturity Scale (CMMS), and the Raven Coloured Progressive Matrices (RCPM) involve different intellectual functions, they all minimize some non-intellectual parameters, such as timed motor responses, which render many other instruments of intellectual assessment invalid for cerebral palsied children. These 3 instruments moreover seem to represent appropriate criteria for mutually validating one another for use with a cerebral palsied population. In this study correlations among the PPVT, CMMS, and RCPM were based on the performances of 38 cerebral palsied children whose mean CA was 149.4 months. The correlation coefficients were all positive and significant ($p<.05$), but there was considerable scatter in IQs among sets of data. The mean IQ on the PPVT was about 20 points higher than the mean IQs obtained from the CMMS and the RCPM, which were approximately equal. In a similar study with retarded, non-cerebral palsied children there was no difference in the mean IQs from the 3 tests, but the correlation between the PPVT and RCPM was slightly higher than that between the PPVT and CMMS and between the CMMS and RCPM. (12 refs.) - *J. C. Moody.*

North Carolina Central University
Durham, North Carolina

1301 **RUTTER, MICHAEL.** Psychological development – predictions from infancy. *Journal of Child Psychology and Psychiatry and Allied Disciplines,* 2(1):49-59, 1970.

Although there is widespread interest in predicting future development of infants for diagnosing pathology and matching children to adoptive parents, the level of prediction which is feasible at age 6 months is very poor. It is possible to make some estimate of the existence or nonexistence of psychological pathology, but misdiagnoses are frequent and no useful predictions of characteristics within the normal range can be made. Pathology is best assessed by examining the child; otherwise, the child's future status is better gauged by examining the parents, although major changes can occur. With improved measurement instruments, it is possible that better predictions could be made in later infancy. More accurate diagnosis of abnormality may become possible by as early as 6 months. Development in the areas of intelligence, temperament, and physical and autonomic nervous system is considered. Possible reasons for the low correlation between infancy measures and childhood measures include lack of individuality, unreliability of measures, the amount of development still to occur, modifiability of psychological development, effects of intrauterine environment, differing rates of maturation, and differences in testable functions in infancy and in maturity. (75 refs.) - *M-E. Sayre.*

University of London
London, England

TREATMENT AND TRAINING ASPECTS - Educational

1302 **ROE, B.** Yes! We do have assembly. *Teaching and Training*, 8(2):48-49, 1970.

In a school for MRs the entire student body and teaching staff meet twice daily so that the younger ones may learn from the older ones and the teachers from the children—all in a spirit of dignity and courteous deportment. A religious atmosphere (prayers, hymns, special services) suffuses the entire school. School assembly is an enjoyable occasion, never dull, always meaningful. (No refs.) - *B. Berman.*

Downham Junior Training Centre
Plymstock, Devon, England

1303 **JOINT COMMITTEE OF THE SEX INFORMATION AND EDUCATION COUNCIL OF THE UNITED STATES AND THE AMERICAN ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION AND RECREATION.** *A Resource Guide in Sex Education for the Mentally Retarded.* Klappholz, Lowell, ed. Washington, D. C. American Association for Health, Physical Education, and Recreation, 1971, 55 p.

This guide defines the special guidance and education the retarded child needs to understand sex and his own sexuality. Sex education (different from sex instruction) begins with attitudes towards masculinity and femininity developed subtly from earliest infancy. Education must be related to individual needs and social contexts and requires adults concerned with growth and development of the retarded. The guide offers precepts and suggestions on course content and methods of instruction. For parents and other adults offering sex education, it stresses self-understanding, independent study of social-sexual problems of MRs, guidance of professionals, and proper attitudes. Curriculum concepts and content should include instruction in self-awareness, physical changes, peer-group relations, and responsibility to society. Samples of teaching styles and lesson plans are presented together with descriptions of numerous printed and audio-visual materials, tapes, and other teaching aids effective in instructing retardates. (199-item bibliog.) - *B. Berman.*

1304 **McCUNE, JUDSON W.** Including driver education in the special class curriculum. *Teaching Exceptional Children*, 2(3):106-112, 1970.

An EMR teenager in a high-school work-study program will be greatly advantaged by having a driver's license. Since many such students repeatedly fail the standard test, the high-school training program should provide them with the knowledge and abilities they need: information on traffic laws, recognition of traffic signs and symbols, answers to oral or written questions, experience in driving a car, and application of traffic laws. Teachers and techniques must be geared to the MR's special limitations. Thus, games in teaching traffic laws and signs and role playing are helpful. Improving reading skills is necessary, as is participation in the driving portion of the school's driver-education program. Success of such a program will be judged by the number who obtain a license. (6 refs.; 11-item bibliog.) - *B. Berman.*

Pennsylvania State University
State College, Pennsylvania 16801

1305 **RICHARDSON, E. J.** Teacher to teacher. *Teaching and Training*, 8(3):79-83, 1970.

Experience in teaching in special education makes clear that the concept of the 'mentally handicapped child' is a misnomer; there is no single homogeneous EMR group: each child's educational needs must be dealt with individually. SMRs are not qualitatively different from other handicapped children; they are within the ordinary continuum of child development. (It should be noted, however, that experience in teaching the mildly educationally retarded does not automatically ensure success with the SMR.) The 'communicative' aspects of teaching the MR must be emphasized, and the traditional aims of communication, self-help, occupation, and socialization must be integrated into an orderly system. Most important, the special training centers for the handicapped must have easy access to all the educational resources and expertise available to the general community. (No refs.) - *B. Berman.*

Denbighshire Educational Committee
Denbighshire, England

1306 **BARDEN, JOHN.** Furniture for the schoolroom. *Special Education,* 59(3):11-13, 1970.

Students at Ravensbourne College of Art and Design (Bromley, Kent) in collaboration with the Spastics Society, have designed and provided items of schoolroom furniture adapted to the comfort, positioning, and special anthropometric needs of cerebral-palsied children. Detailed research in design, field trials, marketing, and production exploration preceded the construction of an L-shaped school desk of variable height, an adjustable-height table, special typing tables, and an aqua chair for hydrotherapy. General principles deduced from these efforts include: colleges are good bases from which to work, new design need not cost too much, mass-produced items are completely satisfactory for the varied disabilities of both children and adults. (No refs.) - *B. Berman.*

Ravensbourne College of Art and Design
Bromley, Kent, England

1307 **LOVATT, MICHAEL.** Mathematics and slow learners. *Special Education,* 59(3):15-20, 1970.

A mathematics-teaching method (based on guided discovery, discussion, and understanding—without rote or specific techniques) applied to a residential class of EMRs has increased interest and awareness and stimulated language and reasoning activity in the students. They were encouraged and shown how to use different methods with the greatest economy. Symmetry, shapes, and the mathematics of everyday objects (windows, lampshades, containers, and many classroom objects) were emphasized. Especially enjoyable were the collection and sorting of data which were then pictorially represented so as to delineate relations otherwise lost in a mass of materials. More important, however, was learning to solve problems with concrete materials, discussion and minimizing abstractions. At the same time, the student was encouraged to verbalize what he was doing—to translate equations into written or oral stories—with eventual internalizing of overt speech. The widest view of mathematics should be taken with EMR children. (No refs.) - *B. Berman.*

Standon Bowers Special School
Stafford, England

1308 **HORN, JEAN.** The problem of older non-readers. *Special Education,* 59(3):23-25, 1970.

The Frostig program to help older EMR non-readers is unique in its concern with pinpointing weaknesses in visual perception. Of 20 children selected for testing in this program (each child, after at least 4 years in a special school, having a reading age under 6 years), all showed some form of perceptual difficulty and were divided into a Frostig group and a reading group. Each group received 3 sessions a week by the same teacher—the Frostig group on the whole Frostig program (a carefully graded and defined program using the Frostig Developmental Test of Visual Perception, remedial work in perception, tests of language and auditory discrimination, and supplementary exercises) and the reading group on conventional reading materials. At the end of 2 terms, retesting showed that perceptual training provides no reading improvement, for there was a mean rise in reading age of 8 months and a comparable range in reading improvement for both groups. The only notable difference was in retest levels on the Frostig test: the group with perceptual-motor training showed definite improvement in perception. Practice can improve perceptual-motor and visual-perceptual skills, even in those of secondary-school age, but at this

age, specific training in these areas does not improve reading. (7 refs.) - *B. Berman.*

Watergate Special School
Newport, I.O.W., England

1309 **KNIGHT, FRANK E.** Music despite handicaps. *Teaching and Training,* 8(2):38-42, 1970.

Mentally retarded and handicapped children should be exposed to good music, for they are capable of appreciating it, have the ability to learn it, and, additionally it provides them with essential, emotional nourishment. At the Manor Hospital, Epsom, England (80 severely handicapped children, including those with Down's syndrome, epilepsy, and autism attend the school), a music therapist is providing individual and group instruction and is successfully employing singing and vocal models to ameliorate vocal impairments. Careful use of rhythm helps overcome disordered rhythmic functioning. Wooden whistle pipes have been used with 15 grossly retarded children to improve breath-expulsion control. A case is cited of a young man with an IQ of less than 30 who performed classical masterpieces faultlessly on the piano. (No refs.) - *B. Berman.*

Manor Hospital School
Epsom, England

1310 **RUTTER, MICHAEL.** Autism: Educational issues. *Special Education,* 59(3):6-10, 1970.

Although we cannot yet definitely assess current educational facilities for the autistic child, there is general agreement that his education (while fulfilling his intellectual, social, and emotional potential) should prevent secondary handicaps, circumvent his primary handicaps, and help develop functions involved in the primary handicaps. To overcome social withdrawal, the teacher must gain his trust provide interesting activities, and take an active role in a one-to-one teacher-child relation that allows ample individual supervision. The autistic child's language impairment requires special techniques, generally utilizing gesture and demonstration, touching and feeling the shape of individual letters. Short, simple sentences facilitate development of language communication; games are useful in learning to shape words into sentences. Underlying all techniques are such crucial issues as: when should education begin (probably, well before age 4 or 5 years); what is the parents' role (co-therapist?); how much pressure to apply; the place of punishment; how much classroom structure; the use of conditioning; special training for teachers; segregated classes; day or residential schooling; inclusion of severe intellectual retardates in classes for autistic children or separation on the basis of IQ; and duration of special education. In general, innovation is essential, but evaluation must be its guide if this education is to be effective. (45 refs.) - *B. Berman.*

London University
London, England

1311 **LaCOSTE, MARY B.** 'Een din dit ma tun weed': A discussion of teaching reading to young exceptional children. *Teaching Exceptional Children,* 2(3):138-142, 1970.

Most EMR children can be taught to read, and they are being cheated if not given an opportunity. Individual instruction should be based on interest and ability, with careful selection of methods and materials. A 7-year-old EMR, despite speech and intellectual limitations, learned to read and changed dramatically from being fearful and withdrawn to class leadership. Teaching such children requires modification of accepted practices; grouping and readiness workbooks are largely ineffective (readiness, in the broader sense of enrichment, is essential). The experience chart is less effective than the basal reader, although the former provides a useful transition from the spoken to the written word. It is undesirable to place a heavy stress on phonics in beginning reading vocabulary. Associating the object (or its pictorial representation) and the written word, flash cards, emphasis on nouns and action verbs, group discussions, alternation of academic and non-academic activities, opportunity for individual sessions, and liberal use of praise are suggested teaching techniques. The approach must be thorough, systematic, specific, with frequent re-evaluation and revision. (1 ref.) - *B. Berman.*

Lakeside Elementary School
Jefferson Parish, Louisiana

1312 **BROWN, LOU; HERMANSON, JERRY; KLEMME, HOPE; HAUBRICH, PAUL; & ORA, JOHN P.** Using behavior modification principles to teach sight vocabulary. *Teaching Exceptional Children,* 2(3):120-128, 1970.

With behavior-modification procedures (contingent reinforcement, modeling, and learning set), TMR children can be taught a basic sight vocabulary. Behavior can be developed by providing a model (teacher behavior) for imitation. Contingent positive reinforcement increases the occurrence of the reinforced behavior, and a learning set (transfer of training among many problems in a single class) facilitates acquisition of new behavior. One 12-year-old girl (IQ 47) was taught a basic sight vocabulary of 57 words (arranged in sets of 3) by contingent praise reinforcement, and modeling. These procedures, adapted for group use by including a participant observer group during a part of the training, proved even more efficient because of the opportunities to observe and learn from one another and through spontaneous development of social reinforcers (applauding and verbal congratulations). The limitations of teaching TMRs may very well be a result of teaching methods rather than the child's learning capacities. (3 refs.) - *B. Berman.*

University of Wisconsin
Madison, Wisconsin 53706

1313 **ZEDLER, EMPRESS Y.** The high-risk and underachieving child. *Texas Medicine,* 66(4):60-63, 1970.

The underachieving, apparently normal child whose presenting complaint is general academic deficiency (having failed to acquire expected competency in one or more of the language modalities including understanding speech, speaking, reading, writing) needs help early if he is not to develop serious developmental and behavioral problems. He must be discovered long before experiencing school failure and taught coping techniques to avoid frustration and depression. Teachers need special instruction and skill in detecting and circumventing potential reading disorders at the preschool levels. Certain physical traits (muscular eye imbalance, inconsistent hand preference, hyperactivity, and involuntary motor activity) which these 'language-disability' children may have are not causes but merely syndrome symptoms. One must avoid pinning labels on these children. They may always have trouble with language, but if given confidence early and if they receive individual support in regular classrooms, they will persist and succeed. (9 refs.) - *B. Berman.*

Southwest Texas State University
San Marcos, Texas 78666

1314 **JOHNSON, MARY.** How early shall we begin education for the MR child? *Special Education in Canada,* 44(3):23-25, 1970.

The sooner education for an MR child begins, the better his chances of reaching his full potential. In institutions for MRs, education should start at birth or as soon as MR is evident. In one institution in an experimental group of 15 children (IQs 45-80) given preschool training begun between ages 3-6 years, 6 Ss received early parole; while in another institution none of 12 children who received no preschool training was placed in the community. School experiences and physical, psychological, and environmental factors can accelerate or depress the rate of development within the organism's limits. Sensory input is the primary requirement for central nervous system development and, therefore, for learning. The retarded child's needs are greater from birth than those of the normal child and the years 3 to 6 are critical for language development. Therefore, the sooner education begins, the greater will be the progress in self-care, social interaction, and pre-academic skills. Many more retarded children can attain successful community adjustment if retardation is detected and training begun soon enough. (9 refs.; 25-item bibliog.) - *B. Berman.*

No address

1315 *Sub-Normal Children: Report to N.S.W. Chapter, Australian College of Education.* Newtown, Sydney, New South Wales, Australia, Teachers' College, University Grounds, 1970, 39 p.

This report on education of the moderately MR in New South Wales, Australia, seeks to provide information, source material, and suggestions for change and improvements. Prepared by a committee representing all relevant disciplines, as well as parents and public and private agencies, it deals with incidence of MR (only 1,711 cases were

identified), attracting and improving the conditions of teachers, adequacy of facilities, and coordination of all areas of special education. The report includes background and descriptive information, discusses social and emotional implications of MR, portrays the MR's individuality, outlines the wide range of facilities bearing on the MR's education and the need for facilities suited to such individuality, examines deficiencies in the present provisions, and makes suggestions for overcoming them. (No refs.) - *B. Berman.*

CONTENTS: Background Information; The Present Position; Suggestions for the Future.

1316 **MEYERS, C. E.** Games people play with EMR programs: Time for some rules. In: Williams, Eddie H.; Magary, James F.; & Moore, Fred A., eds. *Ninth Annual Distinguished Lectures Series in Special Education and Rehabilitation.* Los Angeles, California, University of Southern California, 1971, p. 1-15.

Court orders are decertifying EMR and similar programs in California. The slow-learning child has been lumped with the imbecile, the cretin, and the microcephalic, and parents have been duped by psychologists into accepting the new classification. The core of the problem was in transferring placement functions from curriculum and instruction personnel to psychologists, who are interested in classification and diagnosis. Educators and legislators were confused by terminology and passed laws requiring special classes for the "mildly retarded" or "educable retarded." An educational program must be directed to current behavioral needs, not to remote "medical-model" or rigid psychological etiologies. A more wholesome approach is discernible in newly proposed laws that will provide adequate assistance to learning failures. (14 refs.) - *B. Berman.*

No address

1317 **HOFMEISTER, ALAN; & ESPESETH, V. KNUTE.** Predicting academic achievement with TMR adults and teenagers. *American Journal of Mental Deficiency,* 75(1):105-107, 1970.

Language age (LA) and mental age (MA) were relatively ineffective predictors of reading achievement for 22 TMR teenagers and adults (mean IQ 36). All Ss participated in a reading program based on the Sullivan programed reading series. Program progress was measured by criterion tests administered at the end of 4 weeks and after each 5 pages of material. The program covered a 15-week period. All Ss were pretested with the Stanford Binet (L-M) Intelligence Scale, the Illinois Test of Psycholinguistic Abilities, the Wide Range Achievement Test (WRAT), and the Basic Concept Inventory. The only practical predictor of reading program success was the WRAT. Ss who were successful had WRAT pretest reading grade levels of 1.2 or above, and all but 2 failures were below this level. Recognition of letters of the alphabet was the determining WRAT item responsible for the cutoff at the 1.2 grade level. When attempting to predict academic achievement in MRs, it may be more profitable to consider task-oriented variables rather than LA or MA. (4 refs.) - *J. K. Wyatt.*

Utah State University
Logan, Utah 84321

1318 Personal appearance and hygiene. In: Alpern, Gerald D., & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p. 93-105.

Personal hygiene skills may be developed in MR children by breaking tasks into easily traceable steps, rewarding successful steps as they are carried out, and repeating activities at meaningful intervals. Skills can be developed in the areas of clothing management, grooming, dental hygiene, toilet training, self care during menstruation, and table manners. Good posture can be established by developing body image and space orientation. With seriously MR children who are disinclined toward eye contact, it is important to teach the appearance of visual attention as a social skill. (No refs.) - *J. K. Wyatt.*

1319 **ALPERN, GERALD D.; & BOLL, THOMAS J., eds.** *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, 358 p.

These specific guidelines, pointers, curricular ideas, and procedures for instructing moderately and severely retarded children are aimed at providing information on the how, what, and when of classroom teaching rather than on philosophy or theory. Teaching methods for MRs should be appropriate for the developmental level of each child and should emphasize demonstration, repetition, the breaking down of tasks into small steps, and immediate reward for successful performance. Specific guidelines are included for the areas of physical development, communication, behavior modification, discipline, and personal hygiene. The curriculum activities guide contains specific lesson plans for over 175 activities designed to enhance development in a wide variety of areas. This book should be of interest to special educators. (3 refs.) - *J. K. Wyatt.*

CONTENTS: Introduction; Physical and Motor Development; Communication and Language Development; Behavior Modification and Precision Teaching; Discipline; Personal Appearance and Hygiene; Glossary; and Curriculum Activities Guide.

1320 Introduction. In: Alpern, Gerald D.; & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p. 11-19.

Educational programing for moderately and severely retarded children requires a broad curriculum aimed at preventing regression and at helping each child realize his potential. Each class develops its own rhythm, and this should be combined with a structured schedule to provide order and assure progress. The curriculum should be designed to meet individual and class needs. In general, the curriculum should provide alternate periods of physical activity and desk work and alternation of difficult tasks with tasks that provide an easy success experience. Concept presentation should involve as many senses as possible. Factors such as seating arrangement, task complexity, attention span, expectations, communication mode, and discipline should be considered for each child to provide individual therapeutic educational experiences. (No refs.) - *J. K. Wyatt.*

1321 Physical and motor development. In: Alpern, Gerald D.; & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p. 20-50.

Physical education programs can provide important building blocks for classroom learning. In addition to the development and maintenance of muscle tone, posture, and endurance, these programs enhance emotional growth and maturity, provide social interaction, and aid the development of interpersonal skills. Teaching should begin with simple activities and equipment so that the children will enjoy themselves. Teaching methods should emphasize demonstration, an individual approach, and multisensory stimulation. A list of recreational activities with difficulty levels from preschool through prevocational ages is included. (3 refs.) - *J. K. Wyatt.*

1322 Communication and language development. In: Alpern, Gerald D.; & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p. 51-72.

Communication programs for TMRs and SMRs should be based on individual needs and be correlated with all other school activities. They should emphasize the development of receptive and expressive language. MRs go through the same developmental stages of talking as normals but often at a much slower rate and at a later time. The factors of patterning, conducive teaching atmosphere, timing, and reinforcement must be incorporated into a language program. The developmental sequence for a language curriculum for children with MAs of 6 to 24 months includes prespeech activities, preparation for listening, preparation for speaking, the teaching of functional words and phrases, and the teaching of basic vocabulary. Curriculum sequence for children with MAs of 2 to 3 years includes the teaching of recognition and meaning, categorizing, number concepts, spatial orientation, following directions, and auditory and visual memory. At MAs of 3 to 4 years, the curriculum can emphasize: the teaching of similarities and differences; basic vocabulary; family identification; facial discrimination; sentence building; position, space, and direction concepts; and categories. (No refs.) - *J. K. Wyatt.*

1323 **FRIESE, AFZAL.** The brain-damaged child. *Journal of Rehabilitation in Asia,* 11(3):69-72, 1970.

When neurological findings and/or psychological tests do not confirm a diagnosis of "brain damage" or "injury," diagnosis must be based on behavioral characteristics such as those included in the "Strauss syndrome." Early diagnosis is important. Among the treatment methods with children who display the characteristics of the "Strauss syndrome" are those developed by Doman-Delacato, Laura Lehtinen, and Samuel Kirk. The specific patterning procedures of the Doman-Delacato method have not proved significantly successful. Treatment of developmental problems by the Institutes of Human Potential seems to differ substantially from other methods in the excessive nature of undocumented claims regarding cures and in the excessive demands placed on parents to carry out unproven techniques. The Lehtinen method recommends a non-stimulating teaching environment, individualized instruction, an elemental approach, the use of kinesthesis, and a structured program. A mixture of these methods which has been effectively used to educate children with Strauss syndrome includes consistency, an understanding of the child's strengths and weaknesses, concrete terminology, inductive reasoning, oblique teaching methods, and an obvious display of liking and affection. (3 refs.) - *J. K. Wyatt.*

Amritkaur Bal Vihar
New Delhi, India

1324 **AUERBACH, AARON G.** Teaching the pre-school retarded child. *Deficience Mentale/Mental Retardation,* 20(2):8-12, 6, 1970.

Teachers of preschool MR children should help promote favorable conditions for healthy growth and development, prevent the development and/or continuance of detrimental situations, and provide guidance toward self-fulfillment and self-realization. Although preschool teaching and coursework relating to MR may be useful, the teacher learns best from contact with the children and generally needs to rely on her own inner resources. Accurate description and skilled observation without excessive interpretation will help objectify the problems of individual children and can be used when the teacher seeks help in programing from other professionals. Play for the MR child should be experimental rather than free. The play situation should be controlled and tasks should be specific and highly structured. Play activities can be used to develop peer group relations. The nursery school program should provide many winning experiences by making limited demands and seeing that the children succeed in meeting them. (No refs.) - *J. K. Wyatt.*

York University
Toronto, Ontario, Canada

1325 **EICHLER, LIESE-LOTTE.** Einfurung in die heilpaedagogische Arbeit mit geistigschwer und schweit behinderte kindern (Introduction to medicopedagogical work with severely mentally retarded children). *Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova,* 70(4):619-621, 1970.

In 1954, it was resolved that all East German children and adolescents with physical insufficiencies, mental disturbances, or visual or auditory defects should be registered and that those individuals deprived of a general education in public or special schools because of their handicaps should be admitted to specialized institutes or special departments of psychiatric institutions. This work with SMR children constitutes a small step towards overcoming the consequences of a shameful past. A brief history of investigations of MRs is provided, but the physiological and psychological premises of medicopedagogical work are unfortunately reduced to an exposition of studies on the first and second signal systems and to a description of CA periodization in early childhood. The articles contain an exhaustive description of the entire pedagogical process as well as of the specific materials employed and the formulations of questions posed by teachers in various situations. (No refs.) - *B. J. Grylack.*

No address

1326 **HALPERN, WERNER I.** The schooling of autistic children: Preliminary findings. *American Journal of Orthopsychiatry,* 40(4):665-671, 1970.

Structured language training in a clinical classroom can facilitate entry into public school of a

significant number of previously noncommunicating autistic children. Follow-up on 4 years of work with 15 children, diagnosed as autistic or with autistic features accompanying MR and/or organic brain damage, and enrolled in a special educational program before their seventh birthday, showed that all but 1 had attained some useful speech at the end of the program, compared with 6 who had useful speech on admission. Of the group, 73% was in public schools at the time of follow-up (3 in regular classes and 8 in modified or special classes). Although teachers rated the majority of the children to be poorly adjusted in the classroom and institution, parents rated the level of adjustment much higher. The results indicate that monitoring verbal input and output by means of a well-structured language training program can be effective in the remedial treatment of this disorder. (20 refs.) - *M. S. Fish.*

Rochester Mental Health Center
Rochester, New York 14621

1327 **JEDRYSEK, ELEONORA.** Recent French literature: Psychoeducational aspects. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 9, p. 146-159.

Many of the recent French approaches to the problems of MR differ from those in America. The orientation in France is educational, along with a developmental genetic approach to the understanding of MR. Most reported studies deal with direct experience in work with the MR, rather than research, and reflect concern with social problems of the MR and their families and with improvement of services. The need for more information on MR for both the professional and lay communities has brought about the publication of a number of special issues of journals which contain authoritative and goal-oriented information. Topics covered include educational, psychological, and rehabilitative problems; mild and moderate MR; and research on diagnosis, prognosis, and psychology of the higher functioning MR. Reports of psychological studies include: classification of MR in France; the use of tests which relate more to interpretation and clinical judgment than to numerical values; and the establishment of profiles based on careful analysis of data and oriented toward the belief that IQ is an insufficient basis for diagnosis and prognosis. Educational systems for the MR in France are organized along 2 different lines: classes for the EMR in public schools and special schools with boarding facilities; and medicopedagogic institutions for the more severely retarded. Many borderline students, unable to follow regular curricula, enroll in the special EMR classes, which have a strong orientation toward vocational training, with less emphasis on academic education. Eighty percent of the special classes for MR are integrated into the elementary school system, and early detection of MR has been aided by the establishment of transitory classes to better facilitate educational planning for the MR prior to entry into these special classes. Recent books have dealt with education of MR children; these are directed to both parents and professionals. Some deal with special educational problems such as language development and dyslexia; others address the need to orient education toward the goal of productive work. Work centers and sheltered workshops aid the adult MR in adjusting to work situations, and hostels, often connected to work facilities, have recreation and socialization programs. Several writers have focused on guidance for families of the MR. They have stressed the dangers of isolation of both the parents and their MR children and the role of parents' organizations. (96 refs.) - *M. S. Fish.*

1328 **BRAND, JANE; SHAKESPEARE, ROSEMARY; & WOODS, GRACE E.** Psychological development of the severely subnormal after 16 years of age. *Developmental Medicine and Child Neurology,* 11(6):783-785, 1969.

It is suggested that mentally subnormal children 16-20 years old should remain at the junior training school for additional education. There seems to be an improved learning potential at this age with a significant rise in the mental level and progress in language, comprehension, manual skills, and social competence. Favorable educational experiences with 51 such children are reported. Three instructive case reports are presented. (2 refs.) - *E. Kravitz.*

St. Ebba's Hospital
Epsom, Surrey, England

1329 **BLUMENFELD, S.; COSMOVICI, N.; & VLAD, T.** An experimental study of the role of physical education in the mentally

retarded pupil (Recherches experimentales sur le role de l'education physique chez l'eleve debile mental). *Revue de Neuro-psychiatrie Infantile et d'Hygiene Mentale de l'Enfance*, 17(4-5):225-230, 1969.

In an investigation of the value of physical education for the mentally retarded, a total of 13 children were subjected to psychological (attention, memory, reason) and physiological tests (pulse, temperature, blood pressure, spirometry, dynamometry), and results correlated with other factors, such as family, school, and social background. Physical education programs were found to have a favorable effect on improving mental retardation and some motor defects. Programs should be adapted to the psychic and motor deficiencies to be treated, but should always satisfy the requirements of therapeutic education. Physical education classes should preferably be held in the middle of the scholastic week (Wednesday and Thursday), in the later part of the day. (No refs.) - *K. Baer.*

Neuropsychiatric Clinic for Children
Socola, Jassy, Romania

1330 **LEICHT, KENNETH L.; & JOHNSON, RICHARD P.** Effects of rehearsal instructions on recall and organization in free learning of retardates. *American Journal of Mental Deficiency*, 75(2):163-167, 1970.

Presentation of a category word list and a list of low-meaningful, difficult-to-grasp trigrams to 48 EMRs (mean IQ 65.83; CA 14.47 yrs) demonstrated a reduction in both recall and subjective organization as a result of organization-inhibiting instructions. Examination of recall and organization followed conventional free-learning authorization instructions intended to inhibit organization. Minimal category clustering associated with subjective organization of the category list implied that underestimation of organization by MRs occurs when the scoring is only for category clustering. The number of intertrial repetitions increased markedly with practice; category clustering did not. Similarity in recall and subjective-organization measures for the 2 lists is best attributed to similar effects of instructions and practice variables. (12 refs.) - *B. Berman.*

Illinois State University
Normal, Illinois 61761

1331 **JANSEN, MOGENS; AHM, JETTE; JENSEN, POUL E.; & LEERSKOV, ANDERS.** Is special education necessary? – Can this program possibly be reduced? *Journal of Learning Disabilities*, 3(9):434-439, 1970.

In Denmark's public schools, retarded readers have for a number of years received remedial instruction, and special education, generally, has long been available. There has been a steady increase in the number of children receiving remedial instruction (about 15% of all children receive some form of special education), despite such preventive measures as school-readiness tests and developmental classes for poorly equipped, culturally deprived children. To meet these needs, educational/psychological facilities have been expanded, more teachers and speech therapists have been provided, and division of classes has been introduced to provide opportunity for individualized instruction. Investigators in Denmark and elsewhere note that results achieved by special education, if any, are short-lived. Since the need for special education for the weakest group has increased as education for the normal group has improved, unless greatly varying achievement levels within each normal class are accepted, reduction of special education will require acceptance of a very wide range when evaluating pupil performances in the various fields falling within "normal" education. (13 refs.) - *B. Berman.*

Danish Institute for Educational Research
Copenhagen, Denmark

1332 **WILLIAMS, EDDIE H.** Effects of readiness on incidental learning in EMR, normal, and gifted children. *American Journal of Mental Deficiency*, 75(2):117-119, 1970.

Preparation for learning or readiness through familiarization with the learning material facilitates incidental learning in EMRs (educable MRs) and normal Ss, but has no effect on children of above-average intelligence. Ninety elementary-school children of equal CA (84-119 months) were divided into 3 IQ levels: EMR (50-75), normal (90-110), and gifted (125-158), and randomly subdivided into readiness and non-readiness treatment conditions. Readiness materials included models of a car, house, chair, hat, tree, dog, and airplane. Activities included seeing, handling, and

discussing; a model was presented and the child was asked to identify it and explain its use. Intelligence level was not a determining factor in incidental learning when readiness was given; the 3 groups showed no difference. Without readiness, the gifted Ss did better than the other 2 groups. The characteristic of limited capacity to learn incidentally – previously associated with MRs – was not found valid, suggesting that incidental learning is not necessarily dependent upon IQ. (6 refs.) - *B. Berman.*

University of Southern California
Los Angeles, California 90007

1333 **BARNES, K. H. J.** A foundation of language. *Special Education,* 59(2):26-27, 1970.

An experimental method of teaching communication in speech to a group of MRs (CA 8-15 yrs; 6 Ss with Down's syndrome, 1 with spasticity, and 1 with autism) enabled all Ss to respond with varying success and revealed motor, perceptual, and language difficulties requiring attention. By focusing on imitation of movement as a medium for learning the associated language and using a multisensory approach (seeing a picture of movement or position, hearing the associated words, bodily action, and handling equipment), the method included 5 categories of language and child needs which could be introduced in the context of imitating movements: the body, bodily movement bodily position and direction of movement, spatial relations, and commands. In 6 months language elements associated with 400 pictures were introduced. Individual and group responses were found useful. (No refs.) - *B. Berman.*

Mayfield School
Birmingham, England

1334 **SALLY ANN, SISTER; JEANETTE, SISTER M.; & SHEILA, SISTER.** Sex education for retarded children. *Parent Educator,* 3(9):3A-4A, 1970.

Retarded children need sex education as do normal children, and the parents, in consultation with the physician and the teacher, are best able–in a warm and loving relationship–to give such instruction. Love is the basis of sex education and a loving home is the best place for it. Sex education begins with parents' own attitudes (their unspoken feelings) toward their own sexuality and their emotional and religious attitudes. Sexuality is a natural part of growing up and extends into every area of one's make-up; the retarded child (like every child) has the right to be exposed to a degree of sex instruction–to an understanding of the physical and psychological changes of adolescence–within his comprehension level. Although parents are best qualified for the job, they need the proper attitude toward sex and proper information and methods. Without instruction, the retarded child's anxieties and loneliness may lead him into undesirable sexual activities. The methods must be attuned to each child's individuality. (No refs.) - *B. Berman.*

No address

1335 **JONES, ROBERT M.** Is there a place in industrial arts for the retarded student? *Arizona Teacher,* 57(4):17, 47, 1969.

An industrial-arts program can be beneficial in educating the retarded child. The instructor, once he overcomes his reluctance to assume responsibility for the EMR in the laboratory classroom, can–with minor adjustments–offer the EMR a chance to succeed by learning to experiment with tools and materials and develop his own ingenuity. The teacher will need to suit his methods to the strengths and weaknesses of the EMR who may be erratic, easily confused, unable to project into the future, or have trouble manipulating tools. The teacher must use repetition, brief sentences and phrases, concrete rewards, free-form project work, and frequent review. There should be a specialist in industrial arts willing to assume responsibility for the retarded. (No refs.) - *B. Berman.*

Mesa High School
Mesa, Arizona 85201

1336 **VERGASON, GLENN A.; FINCHER, JANET; & CHATFIELD, MARY V.** Playing cards as instructional aids. *Teaching Exceptional Children,* 2(2):93-94, 1970.

For individual and group instruction, playing cards are an inexpensive, practical, and enjoyable

curriculum supplement and bring variety, fun, and recreation into the classroom. Card games aid in the development of physical abilities, coordination, memory, and perception (card trails, matching and sorting, recording names on tape for auditory discrimination) and teaching arithmetic concepts (counting and recognizing numbers in a configuration). Suggested relay games, using teams, include slapjack, concentration, and spoons. (No refs.) - *B. Berman.*

Georgia State University
Atlanta, Georgia

1337 **NEWBY, M. J. N.** Creative work with remedial groups *Remedial Education,* 4(4):189-191, 1969.

Some children in remedial groups are retarded by factors other than intelligence, and some conceal considerable esthetic comprehension behind a low general-intelligence level. These children should be exposed to and are capable of impressive achievement in drama, poetry, art, and science. Short, enthusiastic, separated study hours—rather than a prolonged, sustained effort—will yield creative production of considerable depth. The low esthetic status of remedial-class creative work must be changed: the higher the expected standards, the better will be the product. (No refs.) - *B. Berman.*

No address

1338 **STEIN, JULIAN U.** Physical education—What it can mean to the retardate and his family. *Mental Retardation News,* 20(1):8, 1970. (Editorial)

Vigorous physical activity and wholesome recreational pursuits contribute much to the growth and development of retarded children. The full potential of physical education and recreation must be used in teaching and training the retarded—particularly the young, the timid, and those at lower functional levels. Physical activities will help them in their greatest difficulties—during leisure and during uncommitted hours. Recreational activities should contribute to family solidarity (through bowling, camping, hiking, etc.). The scope of recreational activities encompasses all ages, backgrounds, and experience levels. (No refs.) - *B. Berman.*

American Association for Health,
Physical Education, & Recreation
Washington, D. C. 20036

1339 **FREDERICK, JOSEPH B.** Something's new afoot. *Challenge,* 5(2):1, 8, 1969.

Bamboo sticks add excitement and variation to a physical-education program for MRs. Obtaining cues and ideas from students teachers can help reinforce many activities with bamboo sticks. Six to 8 feet long, the sticks should be cut at the joints to avoid possible injury and held in a parallel position a few inches above the floor as students walk forward, backward, sideways, and in circles over and around them. Every child can succeed in some task—no matter how simple or difficult—with all the possible variations. Handling a ball adds eye-hand coordination to the eye-foot coordination and the rhythmic and other patterns made possible by these sticks. (No refs.) - *B. Berman.*

Richland Newhope Center for Mentally Retarded
Mansfield, Ohio 44900

1340 **KLETTER, WILLABY.** Music power. *Challenge,* 5(2):3, 1969.

MRs apparently possess innate ability in music (even the most retarded respond to rhythm and some have been taught to play various instruments) and can express their feelings and communicate through it. Musical activities give more meaning to words, enhance coordination, and help to teach MRs to participate in group endeavors. Activities that have been successful with TMR adults include action songs, singing games, singing syllables, ball activities with music, locomotor movements with music, rhythm band, dancing, and listening to records. Because of lack of expectations, music programs for MRs have often been limited. (No refs.) - *B. Berman.*

Willard State Hospital
Willard, New York 14588

1341 **HORRELL, GEORGIA MAE.** Art is for every child. *Parent Educator,* 3(4):1A-3A, 1969.

Given the opportunity, the child with impaired mental ability can express himself creatively through art. Underdevelopment and physical and mental malfunction limit the scope of his experience; he needs help in widening that scope. Creative art expression will increase his sensibility to the experience of living. If allowed free expression, he can be original at his functional level but adults must not demand too much and should give him help without imposing. The adult must be willing to accept the child's expression as valid on its own merits. The parent can provide space in the home where the child is relatively free of restrictions and can contrive sensory experiences in everyday activities (cooking, shopping, and going to bed) that quicken the child's imagination and sensibilities. (No refs.) - *B. Berman.*

No address

1342 **AUSTIN, JAMES T.** Instant replay. *Challenge,* 5(2):10, 1969.

Videotape recording of performance by the MR child or adult and their teachers provides instant replay and an opportunity to observe one's progress. A videotape of past and present performance provides visual evidence of achievement and stimulates creative teaching. New applications are constantly being discovered for this effective teaching technique. (No refs.) - *B. Berman.*

Johnny Appleseed School and Training Center
Fort Wayne, Indiana

1343 **JANTZEN, WOLFGANG.** Die Entwicklung der Sozialstruktur einer Sonderschulklasse in Abhangigkeit von Intelligenz, Schulleistungen und Milieu im Schuljahr 1967/68 (The development of the social structure of a class of a special school, as dependent on intelligence, school performance, and milieu, during the scholastic year 1967-68). *Heilpadagogische Forschung,* 2(3):313-332, 1970.

The dependence of the social structure of a special school class on intelligence, school performance, and milieu was studied over a period of one scholastic year, so as to clarify whether students can be guided toward proper social behavior. Toward the end of the testing period, the choice of behavior of a class member could be predicted in 20 to 25% of the cases (in each case in terms of determination coefficients) by means of the multiple correlations of intelligence, school performance, and milieu. A time series analysis according to the S-technique of correlation and a subsequent linkage analysis (McQuitty) of the correlation matrix resulted in the emergence of 3 clusters: normals with learning handicaps, children with behavior disorders, and MRs. Shifts in the status choices of the clusters during the test period suggested that the children with behavior disorders assumed the leading role within the class, at the expense of the social recognition of the 2 other groups. The effects of teacher behavior (as an intervening variable) could be estimated only with a certain degree of probability. (42 refs.) - *K. Baer.*

63 Giessen
Ludwigsplatz 5, Germany

1344 **LOCKMILLER, PAULINE; & DI NELLO, MARIO C.** Words in color versus a basal reader program with retarded readers in grade 2. *Journal of Educational Research,* 63(7):330-334, 1970.

In a study of 48 second-grade retarded readers enrolled for remedial reading instruction, Gattegno's *Words in Color* and a basal reading program were employed to ascertain whether either program might be responsible for any increase observed in phonics and reading achievement scores. All Ss were tested for IQ (range 61-98) and color blindness, given pretests in reading and phonics, and divided into experimental and control groups. Posttest measures in reading and phonics were obtained. The *Words in Color* approach used with the experimental groups did not produce significantly higher achievement in either phonics or reading than did the basal reading programs. (10 refs.) - *M-E. Sayre.*

Texas A&M University
College Station, Texas

1345 **RAYBON, J. DANIEL.** Junior high school and the disadvantaged: Time for change. *Education and Training of the Mentally Retarded,* 5(3):125-129, 1970.

Problems of EMRs are seen within the context of general educational disadvantage. Such disadvantage occurs because the disadvantaged sometimes form a separate community within our society and thus become isolated geographically and psychologically. The disadvantaged child is a physical, rather than a verbal, learner. With the inability to achieve middle-class goals, such a child may develop low self-esteem or even self-deprecation, which can be academically disabling. There may be a narrow range of both perceptual and conceptual knowledge. Methods of gratification may be incompatible with the deliberative elements in a classroom. Thus, the personality structures of the disadvantaged learners are often incompatible with the objectives, expectations, and strategies characterizing most urban schools. Data on general intelligence, mental ability, and school achievement indicate that general learning is associated with socioeconomic status. These difficulties are reflected at the junior high school level with the result that the schools have failed the disadvantaged, who are not graduated with saleable skills. To correct the situation, effective school community relations, alterations in traditional educational policies and techniques, more autonomy in administration, changes in curriculum and counseling are needed. Teachers must be able to distinguish between capacity and existing achievement. (12 refs.) - *M-E. Sayre.*

Champaign Public Schools
Champaign, Illinois

1346 **BRICKER, WILLIAM A.; & BRICKER, DIANE D.** A program of language training for the severely language handicapped child. *Exceptional Children*, 37(2):101-111, 1970.

A sequence of language training procedures for the child severely handicapped in language is described wherein the standard procedures in behavior modification (differential reinforcement of successive approximation, prompting, fading, extinction, time-out, and stimulus control) are adapted to the needs of the child; however, these techniques will not be entirely successful with all children. Many children with severe language handicaps are not receiving language training because of the paucity of teachers skilled in these techniques, rather than the lack of children's ability to learn language. Language components dealt with specifically are: operant audiometry; receptive vocabulary; imitation; naming objects, events, and people; and construction of sentences. (38 refs.) - *M-E. Sayre.*

George Peabody College for Teachers
Nashville, Tennessee

1347 **McGEE, JERRY E.** Moderate failure as an instructional tool. *Exceptional Children*, 36(10):757-761, 1970.

To test the hypothesis that moderate failure and stress could be used to motivate and teach EMRs, 45 children (CA 10 to 13 yrs) enrolled in public special education classes were tested. The device developed for testing was called the Autotelic Instrumented Manipulanda (AIM). The Ss shoot at animated targets and can read scores on the face of the machine which they interpret as being their own scores. Actual scores are recorded on reels inside the machine. A comparison can thus be made between what the S thinks he is doing and his actual performance. Ss were divided into 3 groups according to IQ and tested on 5 patterns of: straight success, straight failure, and 3 combinations of success and failure. Results supported the hypothesis at a confidence level of .002. With nearly three-fourths of the Ss, success interspersed with moderate failure produced better results than either straight success or straight failure. Ss in the 50-58 IQ range responded best to straight success, while those in the ranges 59-67 and 68-75 did best on a combination. Implications for current MR educational philosophy are discussed and suggestions made for further research regarding age and sex factors. (7 refs.) - *M-E. Sayre.*

Mental Health Division
Salem, Oregon

1348 **MACMILLAN, DONALD L.; & FORNESS, STEVEN R.** Behavior modification: Limitations and liabilities. *Exceptional Children*, 37(4):291-297, 1970.

While behavior modification has great potential for work with atypical children, it is not a panacea. Its use with these children is promising, but it has several limitations since it gives no direction to educational goals and sometimes reduces learning, motivation, and reinforcement to simplistic terms. It may thus prevent children from learning how to learn and hence, preclude

their becoming independent of teachers. Although behavior modification appears to be an effective technique with atypical children, too heavy a reliance upon it results in rigidity in the classroom teacher. Pure behaviorists are inclined to view motivation as extrinsic to learning and to separate the reward from the behavior; such an approach may be justifiable during early stages of a shaping program but should give way to natural reinforcers of behavior as early as possible. (38 refs.) - *M-E. Sayre.*

University of California
Riverside, California 92507

1349 **DENO, EVELYN.** Special education as developmental capital. *Exceptional Children*, 37(3):229-237, 1970.

There is a need for change in special education to meet the learning needs of various kinds of children whose needs are different. Special education should be viewed chiefly as an instrument for facilitation of such change and be organized to carry out educational services rather than as primarily a curriculum and instruction resource for those categorized as pathologically different. The long-standing assumption that the success of special education be judged by the number of its enrollees must be abandoned. Appropriate criteria would measure the extent to which special education is serving the needs of its clientele and the degree to which the children served are progressing toward socially relevant goals. Special education is also seen as an innovative instrument to assist general education in moving toward individualized and personalized instruction. (28 refs.) - *M-E. Sayre.*

University of Minnesota
Minneapolis, Minnesota 55455

1350 **CEGELKA, PATRICIA A.; & CEGELKA, WALTER J.** A review of research: Reading and the educable mentally handicapped. *Exceptional Children*, 37(3):187-200, 1970.

Literature regarding the importance of reading to EMR children is reviewed, with emphasis on those characteristics, such as reading readiness, which most affect the acquisition of reading skills. Current approaches to the teaching of reading to MRs are described, and the efficacy of various methodologies analyzed. Among the approaches discussed are remedial reading, the language experience method, the tactual kinesthetic approach, the initial teaching alphabet, and the Peabody Rebus Reading Program. Programmed instruction and teaching machines are a recent and still controversial method. Implications of the research as applied to the teaching of reading are discussed. It is concluded that the matter of selecting an appropriate method consists chiefly in "the matching of the gimmick to the child." No single best method will succeed with all EMR children. Future research should focus on fitting instructional procedures to individual, rather than group, needs. (55 refs.) - *M-E. Sayre.*

University of Missouri
St. Louis, Missouri

1351 **CALDWELL, BETTYE M.** The rationale for early intervention. *Exceptional Children*, 36(10):717-726, 1970.

The chief reason for early intervention on behalf of the MR child is that environmental influences can ameliorate initial mental handicaps. Supported by reference to the work of various researchers, 3 inferential rationales for intervention are identified: animal studies on the effects of early experience; developmental studies of children reared in environments providing varying amounts and qualities of stimulation; and major conceptual analyses of the role of experience in development. The research summarized indicates that the period from about 1½ to 3 years is the time at which important differences in cognitive level and style begin to appear between children from privileged and underprivileged backgrounds. Empirical support for early intervention is drawn from both current and earlier work which demonstrates the long-term results in mental ability and self-sufficiency associated with early environmental enrichment. Guidelines, with emphasis on the need for longitudinal studies, are suggested for future research and action. (40 refs.) - *M-E. Sayre.*

University of Arkansas
Little Rock, Arkansas

1352 **ERICKSON, DONALD K.; & BLACKHURST, A. EDWARD.** Information

sources for special educators. *Focus on Exceptional Children*, 2(7):1-13, 1970.

The numerous and potentially useful dissemination services in special education are identified and described for the benefit of teachers, supervisors, administrators, parents, researchers, professors, and other interested individuals. Since it was impossible to list every source—especially those which serve state and local needs—the focus was on major national and regional information resources, which, properly used, lead to local sources. Included are: Executive Committees; U.S. Department of Health, Education, and Welfare; the U.S. Office of Education; Bureau of Education for the Handicapped-sponsored information sources; the State-Federal Information Clearinghouse for Exceptional Children; and Closer Look. (2 refs.) - *B. Berman.*

CEC Information Center
Arlington, Virginia

1353 You can help these children. *Grade Teacher*, 87(8):48-49, 65-66, 68-70, 1970.

Teachers can learn by study and observation to detect the child with learning disabilities. A sympathetic approach in the schools is superior to private agencies, because the child will end up competing in a normal world and should learn to associate with normal children. It is possible for the child with learning and emotional problems to find a place in the regular school system; this is better than removing him from the normal stream. Children with learning disabilities constitute about 10% of the school population, and the teacher—in finding and helping them—should start with the underachievers, administer standard achievement and intelligence tests (but depend more on his own powers of observation), and experiment and adapt in handling behavior problems. The children should not be grouped, and the teachers should pay attention to them only when they are doing something that should be encouraged. Available tests of perception, language, and intelligence—especially those for the very young—require special experience, and often are really only guides. Poor language may be the most telling clue, particularly if the child is not talking by age 4 or 5: a severe language delay is a signal to do something. Help for the teacher is available in most school districts. (No refs.) - *B. Berman.*

1354 This school district really cares. *Grade Teacher*, 87(8):50-53, 1970.

The intensified instruction program of the Strongville, Ohio, school system for children with learning disabilities seeks standards for educating such children and salvaging lives that might otherwise be lost to society. When a child falls significantly short of his potential, and the teacher recognizes a problem too severe for ordinary handling, she consults with a psychologist and the intensified-instruction teacher. After psychological diagnosis of a child's learning problem, a program of remedial instruction is mapped, with major responsibility falling on the intensified-instruction teacher. When needed, services of outside professionals are obtained. Average time in the remedial class is 2 years, with variations for individual needs. When the instruction is completed, the child is eased back into a regular classroom. Six to 8 months of supplemental tutoring follow, with continual feedback to check on progress. A complete range of disabilities—physical, language, motor—is encountered; the multihandicapped, severe emotional problems, and limited intellectual ability cases are not accepted. Parents are enthusiastic about the program; in some cases, it has brought families together again. (No refs.) - *B. Berman.*

1355 **LEWIS, MARY P.** Six troubled children. *Grade Teacher*, 87(8):54-56, 1970.

Many children with behavior problems don't necessarily have learning disabilities requiring a specialist's attention. Six relevant cases are cited: George, who pokes others while standing in line: give him something to do with his hands, a "job" he can do that will build self-respect. Joey drops his pencil constantly and can't copy work from the board: perhaps his fine motor control and eye-hand coordination are not commensurate with his age. Give him a pencil wrapped in foam rubber and let him copy work from a piece of paper on his desk. Suzie daydreams, constantly interrupts, and can't follow directions: she may need training in auditory discrimination, association, and memory, using small-group activities. Billy is disorganized, and everyone must wait while he gets his book: he needs help in learning how to arrange and find things in his desk. Tom is a dynamo on the playground, but clumsy in the classroom and forgetful: he may be telling us he finds understanding space, and himself in it, confusing. He needs specific games or activities

to help learn control. Sally is too quiet, can't express what she wants to say: she needs a few moments to organize herself when spoken to. It will help if we consider our own "learning disabilities." We all have our own problems, but as adults we are better equipped to adjust and reorganize; the child needs help. (No refs.) - *B. Berman.*

No address

1356 **KRANYIK, MARGERY A.** Music can help. *Grade Teacher,* 87(8):60, 62, 64, 1970.

Music can strengthen the auditory sense and provide remedial help for the child with learning disabilities by improving memory recall, differentiation of sounds, and attention span. Tape recorders, record players, rhythm sticks, drums, and wooden sticks are as effective as singing in using music as a skill-builder. Piano notes recorded on a tape recorder, when played back, can be used for instructing in tone differentiation, pitch, highness or lowness, and other sensory-motor elements. Drums and rhythm sticks help teach memory recall and small-motor coordination. Powers of attention are helped by playing recordings of program music, with the teacher providing clues with which the child can follow the musical story. Music, presented as fun, can be a good beginning in helping the perceptually handicapped. (No refs.) - *B. Berman.*

No address

1357 **SCHINI, MARY A.** Perceptual problems. *Grade Teacher,* 87(8):56, 58, 60, 1970.

Learning disabilities are unique to the individual child and cannot be solved by formula. However, for children with poor visual discrimination, unable to see details, with poor physical coordination, poor handwriting, and various reading and writing disabilities (letter reversals, omissions of prepositions, phrases, and lines when copying, etc.) there are a few helpful suggestions: (1) Tracing, Cutting, Comparing: trace geometric shapes; cut out letters, shapes, and figures from a magazine; copy diagrams; put together identifiable pictures; number different sections of a diagram and answer questions about the parts. (2) Reading: unscramble word jumbles; use only first letter of key words, and have child fill in the rest; word blocks; interpretation speed exercises; underline nonsense words. (3) Doing: to help poor physical coordination, use balance beams, skipping and hopping, ball throwing and catching, and hopping from one foot to another. (No refs.) - *B. Berman.*

No address

1358 **DORNFELD, FRANK J.** A guide to the development of an individualized motor training program. *Journal of Health Physical Education Recreation,* 41(8):61-62, 1970.

Physical education and individualized motor training for the retarded and the physically handicapped require a multidisciplinary, personalized approach, and development of new tools to help in correcting learning problems. Effective remedial programs can help overcome various problems of poor muscle growth, coordination, and orientation, but they must be ongoing, intensive, and occur in well-equipped settings. Each problem must be isolated, then attacked with progressive exercises. Training in balancing will help correct conceptual difficulties, which sometimes prevent a child's understanding his "standing" problems. Eye-hand coordination is helped by cultivating ball playing, tying knots and shoe laces, throwing, and tracing patterns. In special education, the physical-training program is both prophylactic and corrective (4 refs.) - *B. Berman.*

Board of Education
Westport, Connecticut

1359 **DAUER, VICTOR P.; & SCHAUB, HOWARD.** Communications between physicians and educators. *Journal of Health Physical Education Recreation,* 41(9):18-21, 1970.

A series of conferences in 1964 between the Washington State Medical Association and the Office of the State Superintendent of Instruction established the need for better communication between educators and doctors, and defined adequate health-education programs for children. A child's health is the common responsibility of parent, physician, and educator, all of whom must intercommunicate all relevant information.

A health inventory—detection, remedial care, prevention, education—should be a continuing process for each child, with constant review and critique of the health-education curriculum guide. A 1968 conference on needs of children with learning disabilities discussed cortical integration, cultural problems, emotional disturbance, and motor and perceptual difficulties. Physicians, psychologists social workers educational specialists, and speech and hearing specialists—utilizing all local, state, and Federal resources—must inculcate in deprived children academically oriented skills, including self-control attention span language skills social experiences, inquisitiveness, and ability to respond to questions. The physical educator must be professionally qualified in remedial instruction and work with physicians, teachers, and community officials. Each child must be treated as an individual and permitted to progress, without pressure, at his own speed, in developing organic power, strength, and physical fitness. (No refs.) - *B. Berman.*

Washington State University
Pullman, Washington

1360 **VIGGIANI, JAMES C.** Educating the mentally retarded in England. *Child Study Center Bulletin*, 5(2):29-35, 1969.

Most MRs in England are educated in special schools, both day and boarding, separately from regular school children. A 1966 survey showed that 44,857 educationally subnormal (EMR) children in England and Wales attend special schools. The 1955 Mental Health Act classified those suffering from arrested or incomplete mental development into subnormals (called educable in the U.S.) and severely subnormals (idiots, imbeciles, and lower-grade feeble-minded) and emphasized comprehensive and free community care, including centers for training and vocational rehabilitation, residential accommodations, and welfare and ancillary services. In addition, the act provided for hospital care, when needed; day training centers (special schools for the educable); junior training centers for severely subnormal children; and adult training centers for continued occupational training. Training of teachers of the retarded is organized by the National Association of Mental Health and inculcates a sympathetic and informed approach to students' problems. Special diploma courses are available for particular specializations. Various training centers, special care units, nursery schools, residential hostels, holiday homes, and summer camps are provided by the National Society for Mentally Handicapped Children. This society also operates the Slough Hostel-Workshop Project which serves to demonstrate that even the severely subnormal can be trained to lead useful lives in the open community. (3 refs.) - *B. Berman.*

Board of Cooperative Educational Services
Spencerport, New York

1361 **AUXTER, DAVID.** Integration of the mentally retarded with normals in physical and motor fitness training programs. *Journal of Health Physical Education Recreation*, 41(7):61-62, 1970.

Integration of 11 EMR children (ages 10-13 years) with 86 children from 3 normal fifth grades, utilizing individually prescribed instruction for developing physical and motor fitness, demonstrated the feasibility of having normals and EMRs of the same chronological age work together in such a program. All activities were arranged in carefully graded sequences that permitted quantitative measurement, immediate feedback and reinforcement, and readiness for more complex performance; an auditory stimulus from a tape recorder controlled starting and stopping. A list of daily activities keyed to the child's own pace and using self-instructional devices and a progress profile were provided for each child. Program formulation involved 3 steps: identifying subobjectives, selecting a test to measure these subobjectives and choosing activities relevant to the first 2 steps. (4 refs.) - *B. Berman.*

Slippery Rock State College
Slippery Rock, Pennsylvania

1362 **COSTANZA, VICTOR; & KLAPMAN, HOWARD.** Developing direct classroom consultation. *Journal of Learning Disabilities*, 3(7):351-354, 1970.

Problem children were aided in their classroom work by medical and psychologic consultants acting through intermediary teacher-consultants. At first, many teachers resented the additional burden of providing special attention to a disturbing classroom influence. There were differences in expectations between teachers and consultants. The teacher-consultants had some background in both fields and helped to bridge the

gap between teacher and consultant, to screen cases, and to create appropriate teaching materials. Diagnostic services were of minimal importance. Practical problem solving for specific children was more meaningful than vague, generalized conferences. (No refs.) - *E. Kravitz.*

3 LaCrosse Ct.
Algonquin, Illinois 60102

1363 **STONE, MARTIN C.** Behavior shaping in a classroom for children with cerebral palsy. *Exceptional Children*, 36(9):674-677, 1970.

An experiment was conducted to correct inappropriate and antisocial classroom behavior patterns in cerebral palsied children where usual methods of management had failed. An educational evaluation of each child revealed a variety of learning disorders and inappropriate behaviors. A technique of consistently reinforcing or rewarding a desired response and ignoring or not rewarding an undesirable one was undertaken with a class at the Brownsville Developmental Training Center, consisting of 7 MR boys (CA=7 to 9 years and MA 2 to 4 years lower than CA). During one school year, the boys were motivated first to sit still and then to accomplish simple learning tasks. Motivators used were red marks and cookies; when these later became largely ineffective, pennies were substituted with which the children could purchase simple toys. The classroom became orderly, although appropriate behaviors never became fully automatic; tangible rewards continued to be required. Ability to learn new tasks in self-care and academic achievement also improved. (5 refs.) - *M-E. Sayre.*

Rosedale Cerebral Palsy Developmental
Training Center,
White Plains, New York

1364 **THRESHER, JANICE M.** A music workshop for special class teachers. *Exceptional Children*, 36(9):683-684, 1970.

A registered music therapist was employed for three weeks to teach a class in elementary school music for instructors of MR children at Keene (New Hampshire) State College during the 1966 summer session. The class was composed of 16 teachers, including 7 in special education and 5 in music education. Daily sessions were devoted to lectures (philosophy of music in special education, music as therapy, and methodology); group singing and group discussion; clinic work with a trainable and an educable group of local children; and workshop sessions. A questionnaire was administered before and after participation in the training program to assess the participants' feelings about themselves as teachers in general and as teachers of music to MR children. Fifteen of the 18 scores of participants increased as a result of the workshop; mean increase was 34 points on a 240-point scale. (No refs.) - *M-E. Sayre.*

Gonzaga University,
Florence, Italy

1365 **SABOLL, RUZA.** Programmed education of handicapped children. *Journal of Learning Disabilities*, 3(11):594-595, 1970. (Editorial)

The significant value of programmed instruction in the overall educational and rehabilitative program of handicapped children is stressed. A physically disabled child can gain more knowledge per unit time with this technique than from conventional instruction. Such children have more limited states of comprehension than normal children. The teaching machine can be helpful in attempts to make up the time lost because of sickness and reduced communication potential. Children with learning disabilities can also benefit from programmed instruction, e.g., those with reduced ability to process data in their cortical centers. A student may learn certain things at his own pace, and in fields where teachers may have had poor results. Lessons may be repeated numerous times. Good results have been obtained in teaching mentally retarded children with the teaching machine. (No refs.) - *E. Kravitz.*

General Hospital "Dr. M. Stojanovic"
Zagreb, Yugoslavia

1366 **MORDOCK, JOHN B.** Recent innovations in teaching the autistic child. *Devereux Schools Forum*, 6(1):3-15, 1970.

Experiments with drugs and therapeutic programs have resulted in a more promising prognosis for

children with infantile autism. This disorder, which affects children from the beginning of life, is characterized by aloofness, withdrawal from reality, isolation from the environment, appearance of apathy at 1-2 months of age, and around the fourth month failure to respond when held, often followed by rocking and head banging, obsessive interest in certain toys and objects, repetitive and ritualistic play patterns at 4-18 months of age, and, later, language problems. Hypotheses regarding the cause of autism include psychogenic (indifference by parents), predisposition to instability, unusually developed sensitivity, genetic, damage to the reticular formation or other brain areas, and inability to maintain hemostatic regulation of sensory input. Many studies have dealt with speech and communication problems, utilizing such devices as rewards, imitation, programmed instructional materials, auditory stimuli, and various operant conditioning procedures. Various schools and institutes are approaching the problem of aiding the autistic child, some in individual and others in group learning situations. A number of these programs report progress, and, in several instances, the child has been able eventually to function in a regular school. (28 refs.) - *M. S. Fish.*

Astor Home for Children and
Astor Child Guidance Center
Rhinebeck, New York

1367 SEGAL, STANLEY. Extending the umbrella. *Mental Health*, (Summer):24-26, 1970.

Transfer of the responsibility for the education of MR children from the Department of Health to the Department of Education and Science was announced for April 1971. This move is intended to insure coverage for those MRs and their teachers remaining outside the educational system. Problems arise with respect to integrating the teaching staffs from both departments as well as the need to maintain recruitment for existing educational courses during the interim period. The nature and length of training and the qualifications for both sets of teachers are considered. (No refs.) - *M-E. Sayre.*

No address

1368 WETTINGFELD, JOAN. Library program for retarded children: With a bibliography to order. *Instructor*, 79(10):73-74, 1970.

Although the needs of MR children are not easy to serve, a library program has much to offer them in encouragement, acceptance, and interest sharing. TMRs and EMRs have proven eager, responsive, and reliable in handling library materials and enthusiastic about carrying out simple library tasks. A variety of carefully selected accessible materials and activities is needed including story-telling, finger plays, riddles, language games, films, and books. A bibliography has been compiled containing more than 350 listings appealing to children with MA from 3 to 8 years and CA 6 to 14 years and ranging from readiness to a reading level of 2.8. (No refs.) - *M-E. Sayre.*

Public School 86
Flushing, Queens, New York

1369 OLD, ANNE T. Spelling for EMR – It works. *Instructor*, 79(8):117, 1970.

Spelling was taught to 20 EMR children (CA 9-13 yrs) by the "acting out" technique by which other subjects are integrated with spelling instead of the more common reverse approach. "Acting out" rechannels energies into acceptable activities and, through drills, increases the attention span. In addition to improvement in spelling, benefits were noted in self-expression, self-concept, behavior, handwriting, use of dictionaries, and other related areas. (No refs.) - *M-E. Sayre.*

High Street Elementary School
Bowling Green, Kentucky

1370 ROBBIN, CLARA. School awards for EMR's? Yes! *Instructor*, 79(9):97-98, 1970.

In a school where citizenship and progress awards are given to deserving children toward the end of the school year, a program was devised for presenting awards to members of the special education class of EMR children. Criteria were to do good work, be nice people, and be good citizens. The students and the teacher participated in the selection of 6 children from the special education class to receive awards. (No refs.) - *M-E. Sayre.*

Strandwood School
Mt. Diablo School District, California

1371 **LEE, RUTH.** Art for retarded children. *Instructor,* 79(6):108-109, 1970.

Methods used to teach normal children to express themselves artistically apply, with some adaptations, to MR children as well. A variety of techniques (drawing, tracing, painting, pasting and other media) may be used. Coordination difficulties can be helped by having children copy art masterpieces or brightly colored magazine covers. Because of the problems of motivation and unwillingness of MRs to stop at the end of a fixed time, it is frequently advisable to have an art period without a definite time limit. (No refs.) - *M-E. Sayre.*

No address

1372 **KIPHARD, ERNST J.** Behavioral integration of problem children through remedial physical education. *Journal of Health, Physical Education, Recreation,* 41(4):45-47, 1970.

Movement as a medium of expression is important to the development of the physical, emotional, and intellectual potential of all children, including those who are brain damaged. Self-discipline, moderation, will-power, decision-making ability, courage, perseverence, diligence, and a variety of social characteristics are promoted. Many brain-damaged children have inadequately structured fields of perception and image, and therefore, their perceptual-motor discoordination is manifested as an almost total inability to perceive 2 objects simultaneously. Children lacking eye-hand coordination fail in physical sports because their eye movements are too slow. More usually, however, psychomotor disabilities are less severe, and a progressively structured achievement has therapeutic value for both inhibited and overactive children. Youngsters move from lack of control to self-control by means of education through music and rhythm, exercise in self-command, training of the senses and deliberately slow movements, exploring new and creative exercises in discovering new games or solutions for old ones. (No refs.) - *M-E. Sayre.*

Westfalisches Institut fur
Jugenpsychiatric und Heilpadogogik
Hamm, Germany

TREATMENT AND TRAINING ASPECTS – Psycho-social

1373 **HARTUNG, JURGEN R.** A review of procedures to increase verbal imitation skills and functional speech in autistic children. *Journal of Speech and Hearing Disorders,* 35(3):203-217, 1970.

To improve the inadequate information on conditioning verbal behavior in non-speaking autistic children, a review is presented of the importance of establishing such behavior, the theoretical foundations of verbal conditioning, and the procedures and theoretical implications. Since speech is vital for recovery from autism, the child must be taught to imitate verbally. The training environment and disruptive behavior must be carefully controlled in developing verbal repertoires. Attention and eye contact require conditioning (loud noises and manual guidance being effective), and since the children learn by specific movements and activities, they must be led from motor to verbal imitative behavior, with careful selection and control of vocal responses. Additional concerns include resistance after learning the first word, the sudden emergence of echolalia, and the transition from imitation to naming. The autistic child must be taught how to answer questions and construct phrases (social and natural reinforcers help retain learned phrases). Eventually, through reinforcements, responses to a variety of individuals, and selection of relevant words, appropriate speech is acquired, which, in turn, often will spontaneously generalize to new situations outside the specific conditioning environment. (24 refs.) - *B. Berman.*

University of Houston
Houston, Texas 77004

1374 **MORROW, WILLIAM R.; & GOCHROS, HARVEY L.** Misconceptions regarding behavior modification. *Social Service Review,* 44(3):293-307, 1970.

Behavior modification is concerned with observed behavior and environmental factors that demonstrably influence behavior. It stresses causal control of behavior by manipulating the milieu conditions immediately before and after behavior. Rearrangement of conditions may be simple or complex, in accord with the nature of individual cases. Contrary to the criticisms of some social workers and psychologists, behavior modification is *not*: unvalidated (a growing body of work supports systematic desensitization and reinforcement); mechanistic (the individual can be actively manipulated, but behavior modification does not ignore individual thoughts, feelings, and purposes, and merely advocate symptom substitution); atomistic ('response' does not refer merely to a 'bit' of behavior but applies to large as well as to small units); manipulative and unethical (it subscribes to the same ethical principles other disciplines advocate); hostile to casework (it is concerned with 'background' insights); limited in applicability (its potential range is as wide as the behaviors that involve learning); and entirely derivative (it utilizes a new and fresh approach). (50 refs.) - *B. Berman.*

University of Wisconsin
Parkside, Wisconsin

1375 **SOMMERS, RONALD K.; LEISS, ROBERT H.; FUNDRELLA, DOLORES; MANNING, WALTER; JOHNSON, RAYMOND; OERTHER, PATRICIA; SHOLLY, RALPH; & SIEGEL, MARSHALL.** Factors in the effectiveness of articulation therapy with educable retarded children. *Journal of Speech and Hearing Research*, 13(2):304-316, 1970.

Group articulation therapy administered 4 times a week to a group of EMR children significantly improved their articulation. A total of 180 Ss (mean CA 9 yrs; MA 6 yrs; IQ 70) were examined on 2 articulation tasks (Carter/Buck Prognostic Speech Test and a picture version of McDonald's deep test of articulation), then randomly assigned to one of 3 groups: Group A received 4 periods of therapy a week, Group B received 1 period a week, and Group C controls received no therapy. The therapy, similar to that given a normal-IQ group in a previous study, stressed identification of one defective phoneme for each child and the use of the phoneme in words, phrases, reading material, and spontaneous speech. Raters received intensive training to improve agreement on judgments; picture-articulation scores were derived from comparing pre- and post-testing scores. No significant improvement was detected in the once-a-week group when compared with the controls, and the groups showed no differences on an imitative sentence-articulation test. However, the 4-times-a-week group showed significant improvement in articulation when measured on the McDonald test. (19 refs.) - *B. Berman.*

Temple University
Philadelphia, Pennsylvania 19140

1376 **BRADLEY, BETTY HUNT.** Teaching language to the trainable mental retardate in an institutional setting. *Teaching and Training*, 8(2):43-47, 1970.

The institutionalized moderately retarded child with limited language skills needs a maximum of sensory stimulation to improve communication. Operant-conditioning techniques have to be used to improve language and social skills. Speech training of such retardates should emphasize comprehension of daily needs and environmental objects. Gestures, facial expressions, puppet play, demonstration, and other visual cues are helpful in conveying the desired behavior. Some retardates can communicate by working on complicated puzzles. Working individually with a child in a quiet room without distractions is helpful. A case is cited of a 9-year-old boy (MA 6-7 yrs) who disliked the sound of his own voice but responded to visual materials and tried to write words. A 10-year-old with perseverating speech and little comprehension was taught language by utilizing his superior visual-motor abilities. A basic need is stimulating the child's interest in what is said to him, and focusing on pleasurable experiences. A retarded child will show unevenness in verbal and written communication, but whatever the teaching approach, it must be systematic and geared to the child's needs. (11 refs.) - *B. Berman.*

Columbus State School
Columbus, Ohio 43223

1377 **HILL, FREDA C.** Using token reinforcements to change behaviour in a class of adolescent retardates. *Special Education in Canada*, 44(3):9-18, 1970.

A program of token reinforcements to change behavior in a group of adolescent EMRs (4 boys

and 8 girls) resulted in a reduction of emotional problems, greater attention in the classroom, and generally improved behavior. Tokens were small objects of varying interest to be earned (or lost) according to a schedule of behavioral performance, based on solid baselines established by the teachers. Two educational psychologists provided ratings of performance, behavior acquisition, extinction, and reacquisition. Target behaviors included: deviant behaviors which, if exhibited, were not reinforced (peer interaction, leaving desk, self-vocalization—any distracting sound) and positive behaviors which, if exhibited, were reinforced (attention to work, raised hand, acceptance of direction). Most students liked the program and benefited in some way. (2 refs.) - *B. Berman.*

No address

1378 Behavior modification and precision teaching. In: Alpern, Gerald D.; & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with a Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p.73-82.

Steps in the application of behavior modification principles include pinpointing an observable behavior to be changed, recording the frequency of that behavior, and reinforcing either positively or negatively the pinpointed behavior. Among the tenets of precision teaching are the immediate application of a reward following desirable behavior or an improvement in behavior, and the use of a continuous reward while the behavior is being established and an intermittent reward during maintenance. Shaping involves the rewarding of small improvement and building toward a complicated response. Unless it is dangerous or disruptive, undesirable behavior can be extinguished by ignoring it. Case histories are used to demonstrate the use of time-out procedures and techniques used in cases of teasing, withdrawal, tantrum behavior, and refusal to wear glasses. (No refs.) - *J. K. Wyatt.*

1379 Discipline. In: Alpern, Gerald D.; & Boll, Thomas J., eds. *Education and Care of Moderately and Severely Retarded Children—with Curriculum and Activities Guide.* Seattle, Washington, Special Child Publications, 1971, p. 83-92.

The goal of discipline is remediation rather than punishment. Its aim is to make permanent changes in maladaptive behavior which will increase the probability of acceptance by, and success in, the environment. Disciplinary systems can change either the child or the environment. Teachers should be firm, friendly, and consistent, and should expect obedience. Discipline should fit the specific needs of the child rather than the behavior. Teacher responses to either disruptive or desirable behavior should be immediate. Non-verbal, matter of fact discipline is most effective. Time-out procedures can be very effective. Ineffective discipline is generally due to failure to determine the child's specific abilities or failure to reinforce appropriate behaviors or improvement in behavior. (No refs.) - *J. K. Wyatt.*

1380 **DRUMMOND, SHEILA.** The habilitation of the non-verbal child. *Rehabilitation in Australia,* 7(3):22-25, 1970.

The child who does not develop speech is usually affected in one of the sequential steps through which verbal communication skills are normally acquired: sensitivity and response to environmental stimuli, perception of similarities and differences in these stimuli, and classification of the stimuli as concrete or abstract preparatory to understanding and expression. Habilitation depends on early recognition and diagnosis and consequent multidisciplinary amelioration. Verbal habilitation will be required for the: congenitally deaf child for whom ingenious methods of testing hearing of infants and small children are required and associated social problems require intensive parental guidance, hearing aids, and educational placement; congenitally blind-deaf for whom the speech therapist contributes his knowledge of verbal communication; brain-damaged children for whom non-verbal testing indicates problems in decoding sensory stimuli, perception, conceptualization, thinking ability, and function of speech mechanisms; autistic children for whom therapy is long-term and multidisciplinary; intellectually subnormal children who require clinical interpretation of a test battery and long-term observation; and normal-hearing children deprived of auditory stimulation who generally come from poor housing areas, or multilingual migrant families, where confusion of auditory sensation delays language development. Each child may require a wide range of techniques, as well as a variety of equipment, such as amplifiers, projectors, viewing screen,

record player, musical instruments, or tape recorder. The parallel development of finger skills with speech growth suggests other important speech-incentive activities. (No refs.) - *B. Berman.*

Royal Victorian Eye and Ear Hospital
Melbourne, Australia

1381 **WILKERSON, D. C.** The mentally retarded child: A psychological and child-care approach. *Mental Retardation*, 7(6):17-19, 1969.

A dynamic diagnostic approach to intellectually disturbed children does not label or categorize, but rather considers possible psychological determinants and takes steps to modify pathological processes that interfere with the realization of potential. A child-centered, psychological and humanistic philosophy of child care emphasizes, fosters, and protects teacher-child relationships and uses them to provide basic corrective experiences. Many children have experienced poorly developed human relationships and poor basic mothering. Teachers must learn to help children relate to them, provide basic learning, and understand the psychology of behavior. They must understand their own reactions to a child's behavior and their attitudes toward freedom. Teachers should have an adequate educational background and the freedom to experiment and innovate. (8 refs.) - *J. K. Wyatt.*

No address

1382 **BUDDENHAGEN, R. G.** Issue at point: Toward a better understanding: Part II. *Mental Retardation*, 7(6):63-64, 1969.

Unless psychologists in institutions for the MR render services designed to produce changes in behavior, their services are unnecessary. The clinical psychologist's primary concern is the administration and interpretation of mental tests, a practice which promotes a vacuous data-collecting cycle and frequently does not lead to improved programing for the client. An IQ test is not a necessary first step in any habilitation program. Even in the short period of time in which operant techniques have been used with institutionalized populations, profound changes in behavior have occurred. Increased use of operant techniques will enable many MRs to live in non-institutional settings. Testing programs should give way to teaching programs aimed at increasing independence, occupational skills, and social development. (7 refs.) - *J. K. Wyatt.*

No address

1383 **SNELBECKER, GLENN E.** Behavior modification in education and in the clinic: Facets, origins and probable future. *Clinical Pediatrics*, 9(10):617-621, 1970.

Behavior modification refers to the use of learning principles to develop procedures to resolve clinical and educational problems. Basic to this are Thorndike's Law of Effect and Pavlov's stimulus substitution. The behavior modifier is concerned not with the development of a symptom but with the symptom itself—how is it inappropriate or how should it be changed. Behavior modification is based on very early laboratory work; emphasis is not on the theoretical background but on practicality. If behaviorists continue to be pragmatic and oriented toward ongoing evaluation, then behavior modification will become a significant factor in the development of applied psychology. (20 refs.) - *E. L. Rowan.*

Temple University College of Education
Philadelphia, Pennsylvania 19122

1384 **MANN, PHILIP H.** Modifying the behavior of Negro educable mentally retarded boys through group counseling procedures. *Journal of Negro Education*, 38(2):135-142, 1969.

Twelve white and 24 Negro EMR boys (CA 9 to 13 yrs) were studied to determine the usefulness of extra classroom group counseling with regard to self-image in school and the effects of this counseling on the variables of anxiety, academics, deportment, attendance, age, IQ, and race. The experimental and control groups were matched on CA, IQ, and socio-economic status. In addition to scaled tests, play therapy, films, and personal contact with counselors were used. Significant change in positive self-concept was noted in 1 out of 2 scaled tests. Reduction in anxiety as well as improvement in deportment, reading, and arithmetic were also found to be significant. Age and IQ were not significant factors, and there was no essential difference in rate of attendance. Negroes

in both groups made greater gains in reading and school attendance. It appears that self-concept can be modified through group counseling within the school setting for both Negro and white retardates. Progress depends greatly on the establishment of rapport between the counselor and the group. (23 refs.) - *B. J. Grylack.*

University of Miami
Coral Gables, Florida 33146

1385 **WHITLAM, VALERIE.** The autistic child. *Canadian Nurse,* 66(II):44-47, 1970.

Nursing measures for the care of autistic children are based principally on the adaptation of theories of development, learning, and interaction. Approaches focus initially on the development of a caring and continuing relationship, followed by a structured learning program and, finally, working with the parents to assure them that progress with the child will not be a confirmation of their previous incompetence and that the child must be encouraged to try new activities. The borderline between autism and MR or brain dysfunction is not always easy to differentiate – the symptoms overlap, and general agreement on the best methods for treatment is not available. Major symptoms of autistic children include intellectual function below age level in all areas, lack of speech, withdrawn behavior, severely impaired ego functions, and use of only one sense in recognizing objects. Other features include unusual perceptual patterns and an apparent tendency to turn anger and frustration inward. Motor coordination is usually good, and physical appearance is healthy. These problems arise early in life, and a genetic defect is frequently ascribed as the basis of the disorder. (6 refs.; 4-item bibliog.) - *M. S. Fish.*

No address

1386 **RENTFROW, ROBERT K.; & RENTFROW, DORIS K.** Studies related to toilet training of the mentally retarded. *American Journal of Occupational Therapy,* 23(5):425-426, 1969.

Principles of behavior modification can be utilized effectively for toilet training of the institutionalized SMR. A number of studies based on Ellis' theoretical application of principles of learning theory to toilet training of the MR have demonstrated that while initial success is usually achieved, the Ss often regress when they return to their original wards. Since they require no verbal or language capability, operant techniques are particularly appropriate for this type of training. A number of reinforcements are applicable: positive (edible, manipulable, or social rewards), negative (electric shock, removal of an opportunity to obtain positive reinforcement), extinction (not rewarding or ignoring undesirable behavior). Other techniques based on reinforcement principles include rewarding responses that approximate desired ones, breaking down complex acts into smaller successive ones, different scheduling of reinforcement, and stimulus control. Only recently have these principles been employed on a large scale for the retarded; however, past studies indicate that they hold promise. Additional studies should be focused particularly on the problem of toilet training since, for the MR, this self-help skill is essential for social acceptance and participation in recreational and training programs. (10 refs.) - *M. S. Fish.*

University of Michigan
Ann Arbor, Michigan

1387 **BLOCK, JAMES D.** Operant conditioning. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 8, p. 128-145.

A review of learning studies which employ simple operant conditioning or a selective motor act of the subject emphasizes concern for understanding the problems of the MR rather than details of methods and procedures. Considerable research indicates that an inhibitory deficit may be present in the MR and may explain classical conditioning behavior of the retardate. Retardates have more than normal repetitive characteristics, and various approaches are utilized to work around this problem. In the use of incentives, very low functioning retardates appear to prefer edible to manipulative rewards, and the reward value of intangibles decreases with increasing retardation. In mild retardates reproof has more effect than praise. Individual differences among retardates, however, make generalizations in this area difficult. The most important deficiency in the MR is language function, and conditioning methods have encouraged speech output. Use of nonverbal language, such as a sign language, may be appropriate because of the frequent recognition and use by the

low level retardate of words as symbols. Visual stimuli appear to reinforce longer than do kinesthetic or auditory stimuli, indicating that stimulus modality is important. Use of film and television demonstrations and of electro-mechanical devices can provide advantages over manual methods, particularly in terms of efficient utilization of manpower. Determination of individual differences which occur among retardates may be helpful in designing appropriate treatment methods. Possibly many characteristics can be deduced from a few general principles. Low-functioning retardates present particularly difficult problems, and intensive examination of each is indicated to determine sensory capacities prior to devising treatment. (173 refs.) - *M. S. Fish.*

1388 **CARTON (MRS.); TOMKIEWICZ, S.; & DUCHE, D.-J.** A study of the development of 100 slightly retarded children formerly hospitalized in a medico-educational institution attached to a psychiatric hospital (Enquete sur le devenir de 100 enfants debiles legers hospitalises dans un institut medico-pedagogique annexe a un hopital psychiatrique). *Revue de Neuropsychiatrie Infantile et d'Hygiene Mentale de l'Enfance*, 17(3):129-144, 1969.

This study contains the results of a catamnestic study of 50 young people (of both sexes), ages 8-14 yrs, who had been hospitalized in a medico-educational institution for slightly defective children, 10 years earlier. The first part of the study describes the patient's family environment, both at the time of the study and at the time of hospitalization. The second part studies the patients' professional, social and emotional adjustment after discharge and indicates any psychic disorders that may have persisted. The study shows that prognosis for later social adaptation depends less on the patient's IQ as measured during childhood than on possible neurotic factors and on the general family structure. Most of the children were able to achieve a thoroughly satisfactory adaptation. (No refs.) - *Journal abstract.*

No address

1389 **EYMAN, RICHARD K.; TARJAN, GEORGE; & CASSADY, MICHAEL.** Natural history of acquisition of basic skills by hospitalized retarded patients. *American Journal of Mental Deficiency*, 75(2):120-129, 1970.

A sample of 727 first-admission retardates at the Pacific State Hospital – followed for 3 years and reexamined annually on self-care skills (ambulation, toilet training, and arm-hand use) – yielded a poor outlook. Ratings were made by psychiatric technicians, and analysis of data was based on a simple Markov chain, using 1 year as the time limit to permit estimating the probability of changes in skill levels. Ambulation and bowel and bladder control – critical variables for community placement – were inversely related to age and IQ on admission. Under "standard" treatment, the prognosis was poor, although some changes did occur. Toilet-training changes were more frequent than changes in ambulation, but the latter is more important for placement. When improvements did occur, they took place during the first follow-up year, suggesting the desirability of early application of training. (18 refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California 91768

1390 **BALL, THOMAS S.** Training generalized imitation: Variations on an historical theme. *American Journal of Mental Deficiency*, 75(2):135-141, 1970.

The work of Itard and Seguin, in the nineteenth century, on imitation training anticipated both the general aspects and technical specifics of this training technique. The contemporary concept of "generalized imitation" is embraced in the "mimical generalization" of Seguin, ("personal imitation...is the sudden, unexpected call into action of any organ that can be moved by the will"). Seguin's use of generalized imitation as a modality for training in articulation anticipated B. F. Skinner. Itard anticipated Skinner's successive approximations in restoring speech to a mute catatonic; Isaac also applied this method clinically. The most demanding test of generalized-imitation yet constructed is probably Itard's letter-connection task. Itard and Seguin both recognized that a great deal of learning occurs with extraordinary efficiency through imitation, and that such training frees the teacher from the need to develop afresh each new response to be taught. The problem is to establish imitation as a generalized process. (13 refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California 91768

1391 **BERESFORD-PEIRSE, SYBIL.** Telling the Christmas story. *Special Education*, 59(2):15-16, 1970.

A program of individual music therapy in a school for 18 autistic children made use of the narration of the Christmas story to involve the children in an experience of personal responsiveness and improved self-confidence. The story was presented as a whole until they gradually grasped the idea that they were to retell it to their parents in a play. The actual form of the story grew around the children, with each assigned an appropriate singing role, and simple methods were used to help them identify with the characters. It was a shared experience, beneficial to teachers and students alike. (No refs.) - *B. Berman.*

Inner London Educational Authority
London, England

1392 **RAY, EDWARD T.; & KILBURN, KENT T.** The use of operant conditioning with disturbed adolescent retarded boys. *California Mental Health Research Digest*, 7(4):211-212, 1969.

Operant conditioning for treating adolescent MR males in a state hospital uses 2 approaches: (1) individualized handling of behavior problems with rewards for appropriate behavior, and (2) eliciting and sustaining certain required social skills, such as good work habits and personal hygiene. Positive reinforcements in the natural environment had to be supplemented by a "token economy" (tokens exchanged for various privileges, events, and material goods in a system of rewards and fines related to behavior) under supervision of psychiatric technicians. Difficulties in applying operant conditioning involve the need to change old attitudes and establishing baseline measures and goals. (No refs.) - *B. Berman.*

Porterville State Hospital
Porterville, California 93257

1393 **CLANCY, HELEN; & McBRIDE, GLEN.** The autistic process and its treatment. *Journal of Child Psychology and Psychiatry*, 10(4):233-244, 1969.

Autism is best seen as a developmental process (there is no single cause) within the many dimensions, interrelations, and feedback mechanisms of the family structure. Behaviors noted in the child with autism include lazy sucking, absence of the smiling response, quiet undemanding behavior, unresponsiveness to the human voice, and strong contentment in the absence of human contact. Mothers of children with these behaviors seem to exhibit their own typical behaviors (practical, capable, dominant, showing great attention to detail, and frequently upset by trivia). Lazy sucking and feeding difficulties quickly become aversive to both mother and child and lead to minimal contact and an absence of a reciprocal mother-child bond, which effectively eliminates the normal socializing process. The resulting autistic process isolates the child on his own terms: he resists intrusions and develops skill in manipulating his surroundings. Treatment regards the family as a unit and seeks to interrupt the autistic process with primary and secondary socialization (especially language) through operant conditioning. By skillful intrusions on the child and by changing his feeding habits, therapy aims at a system of family bonds which enmesh the child in a framework of normal socialization. (15 refs.) - *B. Berman.*

University of Queensland
Brisbane, Australia 4067

1394 **DAY, GINGER.** Democracy in action at the Young People's Social Club. *Challenge*, 5(1):3, 1969.

In Houston, Texas, the Young People's Social Club within the Harris County Center for the Retarded, where educable or trainable retarded boys and girls over age 17 are able to interact socially, held its customary election of officers (in 1968) in a manner comparable to that of the national Presidential campaign. Candidates were instructed in electioneering, preparing formal campaign speeches, and discussing, within their limits, the entire democratic machinery. The young adults took their project very seriously and developed their own special techniques for putting their views across. The Club has made all participants feel accepted and worthwhile and has succeeded in developing many firm friendships among members. (No refs.) - *B. Berman.*

Harris County Center for the Retarded, Inc.,
Houston, Texas

1395 **TUNNER, W.** Allgemeine theoretische Grundlagen der Verhaltenstherapie

(General theoretical foundations of behavior therapy). *Zeitschrift fur Psychotherapie und medizinische Psychologie*, 20(4):147-153, 1970.

Behavior therapy is any procedure in which, for the purpose of therapeutic modifications, disturbances of behavior are placed under the control of experimental conditions, and in which the variables becoming effective therein are analyzed. Fundamental tests in this field are based on Pavlov's and Bekhterev's work on conditioned reflexes Gradually, a number of techniques of behavioral therapy were developed; they were used to provoke and eliminate autonomous excitation. The principles underlying this form of therapy have actually been in use for a long time; what is new, is the systematic approach in the setting of conditions under which learning processes come into existence and under which the effects of those processes are maintained. (7 refs.; 10-item bibliog.) - *K. Baer.*

University of Munich
Munich, Germany

1396 **BERGOLD, J. B.** Ziele und Methoden der Verhaltenstherapie (Aims and methods of behavior therapy). *Zeitschrift fur Psychotherapie und medizinische Psychologie*, 20(4):153-162, 1970.

The objective of behavior therapy is not just the modification of a certain defective behavior pattern; rather, the patient is to be aided in improving control over his behavior. Treatment is administered in 2 phases: behavior analysis and behavior modification. Behavior analysis provides the required information for the establishment of the treatment plan. During the analytical phase, data are collected which will later enable one to verify the effectiveness of the modification phase. Procedures fall into 3 categories: procedures to lower the probability of the occurrence of false behavior, procedures to increase the probability of the occurrence of adequate behavior, and procedures to control stimuli. The selection of a procedure depends on the functional context within which the false behavior takes place. (11 refs.) - *K. Baer.*

University of Munich
Munich, Germany

1397 **SCAGLIOTTA, EDWARD G.** Deck-stacking: A way to help the troubled child. *Children's House*, 4(3):6-9, 1970.

Deck-stacking, a technique whereby parents intercede for their handicapped child with school or neighborhood children and help to foster valuable peer relationships, is a useful prelude to the achievement of social acceptance. By honestly discussing the child's condition and needs – always emphasizing the positive aspects – parents may help their child develop valuable friendships and needed self confidence. Where these techniques are not feasible, groups of special children can be organized, preferably under the direction of a psychologist, to engage the children jointly in programed social activities. In developing such situations, it should be realized that the child needs to achieve a series of successful social experiences, sufficiently strong and motivating so that he feels competent to extend them to other circumstances. (No refs.) - *N. Mize.*

No address

1398 **RUCKER, CHAUNCY N.; & VINCENZO, FILOMENA M.** Maintaining social acceptance gains made by mentally retarded children. *Exceptional Children*, 36(9):679-680, 1970.

An extension of earlier work done by Chennault (1967), this study was designed to test the permanence of social-acceptability gains made by unpopular students in EMR special classes. A modified Ohio Social Acceptance Scale (OSAS) was administered as a pretest to 95 students in four intermediate and two junior high educable special classes. For the 24 least accepted students, the mean IQ was 65 (WISC) and mean CA 11-7. An aide met with each of six treatment groups made up of the least-accepted students and the two most accepted students of each class for two weeks in 45-minute sessions twice weekly. Each group planned and carried out a carnival for its class. From results of a post-test three days after the carnival and a post-post-test one month after, it was concluded that acceptance of EMR students in special classes can be enhanced, but that gains will diminish after treatment ends. Since the post-post-test showed that the students did not maintain their gains, attempts to increase the acceptance of unpopular MR children in this way would be impractical in many situations. What is required is a different technique for enhancing

student status while treatment continues for an indefinite period. (2 refs.) - *M-E. Sayre.*

University of Connecticut
Storrs, Connecticut

1399 **FLYNN, TIM M.; & FLYNN, LYNDA A.** The effect of a parttime special program on the adjustment of EMR students. *Exceptional Children,* 36(9):680-681, 1970.

A School Adjustment Scale (SAS) was constructed to determine whether personal and social adjustment of EMR students is improved by placement in a part-time special education program. The SAS consisted of 30 classroom situations measuring relations with adults, relations with peers, cognitive skills, class participation and self-control, with five possible behaviors presented for each. Ss were 183 students – 61 enrolled in special education, 61 eligible and on the waiting list, and 61 normals. The expectation that special-class students would achieve significantly higher scores than the waiting-list group was not supported. Conversely, a finding that waiting-list students were promoted to the next grade more often than special program participants casts doubt on the special program's value. A regular classroom teacher's awareness of MR status may negatively influence his judgment as to promotability of the MR child; the lower correlations between SAS and promotion and intelligence may stem from this same cause. The special student's resulting lower promotion rate may also negatively affect school adjustment. The educational program should be planned to eliminate this effect and to provide many success experiences for EMR students. (No refs.) - *M-E. Sayre.*

Florida State University,
Tallahassee, Florida

1400 **FORNESS, STEVEN R.; & MacMILLAN, DONALD L.** The origins of behavior modification with exceptional children. *Exceptional Children,* 37(2):93-100, 1970.

This historical review recounts the origins and techniques of behavior modification, from the temple psychiatry of the Greeks and aversive treatment of the early Romans through the 1960's. Emphasis is on the history since 1900, including the work of the early behaviorists (Thorndike, Pavlov, Watson, and others). Refinement of techniques and broadened application of the principles established in the early part of this century occurred between 1930 and 1950. During the 1950's, a considerable upsurge took place in the area of behavioral research, especially as an outgrowth of Skinner's work. Within the last decade, more intensive work directed toward modifying behavior associated with emotional problems has occurred. The last 5 years, especially, have witnessed the greatest impact of behavior modification in the education of exceptional children, including adaptation of behavior modification principles to the classroom setting. (44 refs.) - *M-E. Sayre.*

University of California
Los Angeles, California 90024

1401 **GRAZIANO, ANTHONY M.** A group treatment approach to multiple problem behaviors of autistic children. *Exceptional Children,* 36(10):765-770, 1970.

The problem was to determine whether severely psychotic (autistic) children could benefit from being organized into small groups staffed by nonprofessionals and to develop behavioral approaches as an alternative to ineffective psychodynamic methods. A longitudinal study over a 6-year period was based on 8 assumptions about maladaptive behavior and therapy. Initially, 4 severely autistic children were enrolled in the group, with other children added later. Through a highly detailed, structured program of behavioral analyses and group behavior modification, the children were moved from their characteristic aloof, nonverbal, noncommunicative, destructive, and volatile behavior to sustained, controlled, socially cooperative and verbal group behavior. All developed usable speech, and some learned to read, write, and calculate. It is concluded that: autistic children can learn social behavior, self control, and academic achievement; highly selected nonprofessionals with high school education can be trained in behavioral approaches and function as competent therapists; behavioral concepts and techniques can be developed and applied without reference to psychodynamics; and autistic children can be brought to a level of complex social behavior within 2 or 3 years, especially where there is parental involvement within the program. (12 refs.) - *M-E. Sayre.*

State University of New York
Buffalo, New York 14214

TREATMENT AND TRAINING ASPECTS - Occupational

1402 **FENDELL, NORMAN.** Dining club for senior citizens and retardates. *Rehabilitation Record*, 11(4):26-27, 1970.

A Dining Club in Manchester, Connecticut, is a community habilitation project, which is part of a work-study program for high-school retardates and provides low-cost, nutritious meals, once a week, for 100 elderly people. In 2 years, 11 retarded girls have been trained in preparing and serving meals, and the Dining Club plans to provide work (in a supervised working environment) for TMRs (IQ below 50) who cannot compete in industry. Trainees learn preparation of vegetables and salads, equipment maintenance, personal hygiene, and various food-service skills. All have developed self-confidence, are more communicative, and are eager to participate socially. (No refs.) - *B. Berman.*

Board of Education
Manchester, Connecticut 06040

1403 Fiberglas Canada Ltd. and staff of Ontario Hospital School, Orillia, set up chair production industry. *Deficience Mentale/Mental Retardation*, 20(4):23, 1970.

Personnel from Fiberglas Canada, Ltd. cooperated with the staff of Ontario Hospital School (Orillia) to produce a quality industrial sheltered workshop in which a specially-designed chair can be produced by adult MR workers. The environment chair was designed for institutionalized MR children. It rocks and rolls and is tip-proof. It has a drawer for personal possessions. The chair is made of fiberglas and is durable and colorful. It serves as both a toy and a small environment. (No refs.) - *J. K. Wyatt.*

1404 **ANDERSON, A. R. K.** Letter to Provincial Associations for the Mentally Retarded from the Public Service Commission of Canada. *Deficience Mentale/Mental Retardation*, 20(4):8, 1970.

The Public Service Commission of Canada subscribes to the principles that it should hire on the basis of ability rather than disability and should set a good example in the employment of handicapped individuals. Provincial Associations for the MR are asked to support and assist in the development and implementation of a program for the employment of MRs. The program will involve the identification and location of positions which can be filled by MRs, the development of suitable selection and on-the-job training methods, and the selection and placement of MRs with appointments being made without formal competition. Initial employment would be for a probationary period of 1 year. During this time, the staff of the local Association for the Retarded would follow progress closely and assist with problems that develop. Advancement to higher levels of employment would be based on the normal competitive process. The Association for the Retarded would engage in continuing close cooperation with the Public Service Commission for the entire time the MR employee remains in the Service. (No refs.) - *J. K. Wyatt.*

No address

1405 **SHORT, R.** What do we want for the mentally handicapped. *Deficience Mentale/Mental Retardation*, 20(4):31-32, 1970.

Adult programs for MRs should be dynamic, positive attempts to assure optimum rehabilitation, and intelligence systems should provide complete data regarding local problems and the efficiency of services. Senior occupation centers should provide realistic assessment and training and measurements of social competence for MR adults. Diversional occupation should not be a part of these centers. Services should undergo periodic evaluation which includes constructive information on the experiences of MRs and their relatives. (No refs.) - *J. K. Wyatt.*

Director of Mental Retardation Services
New Brunswick, Canada

1406 **BUCKRELL, MARGARET.** Observations in a sheltered workshop. *Deficience Mentale/Mental Retardation,* 20(4):4-7, 1970.

The scope and intensity of sheltered workshop programing should be broadened to enable young trainees to use previous school learning and develop mature and acceptable behavior patterns. The vicious circle created when TMRs who sometimes behave like children are spoken to and treated like children can be broken by treating them with dignity. The workshop staff must be concerned and provide guidance and organization. Although many TMRs can be trained to assume most adult responsibilities, continuous guidance is essential. (5 refs.) - *J. K. Wyatt.*

No address

1407 **KING, RALPH E.** Empathy is for people. *Deficience Mentale/Mental Retardation,* 20(4):2-4, 1970.

A manufacturing company combines empathy and engineering to provide employment for MRs and quality merchandise. Employees are rated in 28 categories, and MRs rank high in loyalty, integrity, consistency, and company pride. Jobs have been realigned to segregate those tasks which are suitable for MRs, and a system has been developed to assign the proper tasks to appropriate employees. (No refs.) - *J. K. Wyatt.*

Cee Gee Canadian Garment, Limited
Morden, Manitoba, Canada

1408 **MOLLOY, D. R.** How can sheltered employment be made a more economic proposition? *Rehabilitation in Australia,* 7(2):3-8, 1970.

For a sheltered workshop to be efficient and run as economically as possible, the management must have a fully professional approach. The whole organization and cost structure is based on recruitment and employment policies. Employment is generally long-term rather than for a short-term rehabilitation or assessment period. When the recruitment policy is oversympathetic and unrealistic, workshop cost is high. A trial period can be used to assure the retention of individuals who can make a realistic contribution to production. Although disabilities should be mixed, the work force should not be more than 20% MR. A workshop should avoid an institutional atmosphere, and individual contributions to production should be viewed efficiently and realistically. Guaranteed employment raises working costs because of the subsidy required when there is insufficient work. Efficient operation requires a fully qualified trained staff; carefully developed product and marketing policies, a dynamic, sensible wage policy; the use of method study and clever production engineering; and skillful price estimating and negotiating. The principles and practices of management are synonymous with efficient workshop operation. (No refs.) - *J. K. Wyatt.*

No address

1409 **DOLESHAL, LESLIE L., JR.; & JACKSON, JAMES L.** Evaluation and follow-up study of the Texas Cooperative School Program. *Rehabilitation Literature,* 31(9):268-269, 1970.

In a sampling of 342 MRs who had completed a special vocational-adjustment program conducted by the Texas Division of Special Education, a questionnaire survey showed that 131 (65.8%) had attained full employment. The course involves vocational diagnosis by trained counselors and successful completion of a full-time job obtained for the retardate through community cooperative endeavors. This cooperative school program has 150 participating school districts and 175 vocational-adjustment coordinators and each year graduates about 1,800 MRs across the state. Clients for whom data have been obtained disclose definite vocational success trends, with advancement in employment and earnings. (2 refs.) - *B. Berman.*

Texas Rehabilitation Commission
Austin, Texas

1410 **LUSTIG, PAUL.** Differential use of the work situation in the sheltered workshop. *Rehabilitation Literature,* 31(2):39-42, 49, 1970.

Planned manipulation of the components of a work situation in a sheltered workshop for the

mentally handicapped and orientation of clients toward other people have modified behavior and improved job adjustment. Each job's components are identified, then situational aspects are modified to fit individual needs. Verbal relationships to provide self-understanding are stressed, as is the view that behavior results from interaction between the individual's characteristics and the situational stimulus factors. Situations are manipulated through various organizational factors which include time (increasing or decreasing the amount devoted to an activity), position (modifying the worker's location to work components), rate (varying the speed requirements of a job from fast to slow), type of interpersonal work relationship (democratic or autocratic), and quantity (the number and kind of stimuli to which the worker relates: personal and non-personal). (14 refs.) - *B. Berman.*

University of Wisconsin
Madison, Wisconsin 53706

1411 SAMMUT, VINCENT J. Work for the handicapped. *Qawwi Qalbek*, 10:17-18, 20, 1970.

In Malta, employers are discovering that the handicapped (physical, mental, emotional) have their own special contribution to make and can do a good job when given the opportunity. The Disabled Persons Employment Act of 1969 provides for the compulsory employment of registered disabled persons by employers with more than 20 persons, sets up industrial rehabilitation courses for those not fully fit to return to their previous jobs, and establishes a register of the disabled. The underlying concept is that everyone has limitations, and it is not what a person has lost that counts, but what he has remaining. (No refs.) - *B. Berman.*

No address

1412 RASMUSSEN, WILLIAM D., JR. Cosmetology — A glamor career for retardates. *Rehabilitation Record*, 11(5):1-4, 1970.

A pilot program in St. Louis, Missouri, has provided a pattern for training MRs to be successful beauty operators. Cooperatively sponsored by the State Cosmetology Board, the Division of Vocational Rehabilitation, and a progressive beauty academy, the program has certified 16 retarded girls and has increased the proportion of qualifying students from 20% to 80%. Suitable adaptations for the MR students were made: a consultant in special education rewrote the course text; terms were standardized, audiovisual materials were introduced; and the course was lengthened from 7 to 10 months, with each S receiving individual attention. The State board of examiners has made a number of modifications geared to slow learner capacity. Plans include extending training to even lower verbal levels (Ss so far have been at the educable level). (No refs.) - *B. Berman.*

St. Louis Jewish Employment
and Vocational Service
St. Louis, Missouri

1413 LAMBERT-VINCHENT, (MRS.). L'inauguration des nouveaux locaux de l'A.P.A.M. (Inauguration of the new facilities of A.P.A.M.). *Amentia*, 22(October):24-27, 1970.

At the inauguration of a new workshop for the MR, the managing director of the association for protection and aid to the mentally handicapped outlines the usefulness of the workshops. They provide the handicapped, who would never fit into normal industrial plants with an adequate environment in which they may respond in a satisfactory way to adapted demands. The possibilities and weaknesses of each participant must be carefully studied, but many can be trained to perform an economically profitable task and feel useful. So the workshops, though they need some financial help, are not merely a form of charity but fulfill a socio-economic function. (No refs.) - *G. Van Massenhove.*

No address

1414 MERACHNIK, DONALD. Assessing work potential of the handicapped in public school. *Vocational Guidance Quarterly*, 18(3):225-229, 1970.

Assessment of work potential in a public school handicapped population should emphasize individual diagnosis and avoid grouping into traditional diagnostic categories. The focus of the evaluation should be on the identification of areas of

strength, rather than on weaknesses. Basic simple abilities may provide clues to areas that can be developed into work activities. The special needs of each individual must be identified and related to work potential. When interest and aptitude testing is used with the handicapped, their lack of opportunity for exploratory experiences must be considered. The interpretation of standardized intelligence and achievement tests should take into account student feelings toward the testing and degree of orientation toward school-related questions. Although parents should be consulted and counseled when work experiences are planned for their children, on-the-job success frequently does more to demonstrate the child's strengths to the parents. Exploratory work experiences can reveal general work potential and potential for special skill development. They can also increase understanding of the effects of capabilities and limitations in a work setting. Assessment of work potential should be based on knowledge of the labor market and job opportunities. Successful job placement may depend on rethinking job processes in the light of individual limitations and in convincing the employer of the student's ability to carry out the job. (10 refs.) - *J. K. Wyatt.*

Union County Regional High School
District No. 1
Springfield, New Jersey 07081

1415 Farm training programs. *Deficience Mentale/Mental Retardation*, 20(2):26-27, 1970.

Farm training centers can improve the quality of life for the handicapped and offer an alternative type of work and living accommodations. Among the farm training programs available for MRs in Canada are the Variety Farm Training Centre (Ladner, British Columbia), Smithers Experimental Farm (British Columbia), and a farm on the grounds of the Dr. Endicott Home and School (Creston). International farms include Lufton Manor (England) and Hawkevale Farm Village (Australia). (No refs.) - *J. K. Wyatt.*

1416 **KENDRICK, JUNE; & SUDDERTH, JACK.** But it doesn't look like a school. *Rehabilitation Record*, 11(2):28-31, 1970.

The Vocational Rehabilitation project of the Dallas Vocational School was initiated in 1959, and since 1964, it has had an annual enrollment of 100 or more MRs. During the first few years, professionals involved in the project received on-the-job training, and various training methods were attempted. At the close of the initial 3-year grant, 61% of all students who completed the program were considered successful. Some MR students obtain employment after a training period of 3 to 6 months while others train for as long as 3 years. The MR curriculum includes personal or work adjustment training as well as training in specific job skills. Vocational adjustment coordinators provide student supervision, recommend or locate job training situations, and assist the vocational rehabilitation counselor. Although students' first jobs are frequently not in vocations for which they have been trained, the structure provided by the training helps them gain the confidence and other assets needed to retain a job. Training areas include kitchen, laundry, dry cleaning, duplicating machines, packaging, custodial work, furniture refinishing, painting, service station work, and industrial training. (No refs.) - *J. K. Wyatt.*

Texas Rehabilitation Commission
Austin, Texas

1417 **CLARK, GERALD R.; KIVITZ, MARVIN S.; & ROSEN, MARVIN.** From custody to independence: Report of a rehabilitation program for retarded adults at Elwyn Institute. *Rehabilitation Record*, 11(2):10-122, 1970.

Two hundred MRs have been discharged from Elwyn Institute (Pennsylvania) in the last 5 years after participating in a rehabilitation project, and none have been readmitted. Participants had spent from 2 to 49 years in institutions. The rehabilitation program emphasized concrete, practical manual and vocational skills. Vocational training and work experience were provided in the institution. A comprehensive adult education program included socialization experiences counseling, and remediation. A follow-up study of 65 individuals who had been in the community for 6 months to 5 years showed that they were succeeding in unskilled and semi-skilled occupations and were steady, reliable workers. They had avoided serious legal difficulties, coped adequately with everyday problems of living, and paid their bills. Social adjustment seemed comparable to that of non-MRs of similar socioeconomic levels. (No refs.) - *J. K. Wyatt.*

Elwyn Institute
Elwyn, Pennsylvania 19063

1418 **BECKER, RALPH L.; & FERGUSON, ROY E.** Assessing educable retardates' vocational interest through a non-reading technique. *Mental Retardation* 7(6):20-25, 1969.

The Vocational Picture Interest Inventory (VPII) is a reading-free vocational interest test which was developed to assess the interests of prevocational institutionalized MRs in areas such as food service, nursing, laundry, housekeeping, horticulture, maintenance, storeroom, and messenger. Bold line drawings present descriptions of tasks in 13 interest areas. A forced-choice type response is used. An empirical validation study employed 283 institutionalized MRs and institutional workers from actual work areas. Reliability studies on 50 females (mean CA 17-10; mean IQ 64) and 60 males (mean CA 17-7; mean IQ 62) yielded test-retest coefficients that ranged from .68 to .84 for males and from .67 to .84 for females. The VPII has been used to identify the emerging interests of 40 MRs evaluated toward the close of a 22-week prevocational program. Findings generally confirmed the observations of work-sampling teachers. (15 refs.) - *J. K. Wyatt.*

Columbus State Institute
1601 West Broad Street
Columbus, Ohio

1419 **BAECHLER, VRENI.** Hausliche Pflichten als Mittel zur Erziehung des geistig behinderten Jugendlichen (Domestic duties as a means for the education of mentally retarded juveniles). *Schweizer Erziehungs-Rundschau*, 43(6):167-169, 1970.

A 14-year old MR girl who was assigned to and successfully performed the duties of a housekeeping aid in a home for 14 juveniles has demonstrated that domestic work can be a useful adjuvant in the education of the MR. The gradually acquired capability of performing certain useful, repetitive tasks helps the MR to orient himself and acquire a certain self-confidence. But, care must be taken not to stress habit and practice exclusively; the method of education and, particularly, the basic attitude underlying it, are more important than the means of education applied. Since the MR lack differentiation, they will always remain dependent on guidance and sympathy on the part of the educator. (No refs.) - *K. Baer.*

No address

1420 **NIXON, RUSSELL A.** Impact of automation and technological change on employability of the mentally retarded. *American Journal of Mental Deficiency*, 75(2):152-155, 1970.

Studies of employment and of impact of technological change on labor capacity and skills carried out by the Bureau of Labor Statistics and the American Statistical Association refute the widely held beliefs that worker requirements are changing in such a way as to sharply reduce or even eliminate the need for vocational rehabilitation of MRs. Technological changes may even increase the opportunities for the retarded: a study of the textile industry indicated that some highly automated machines may require less training to operate. A 1964 analysis of the impact of automation on 132 workers in an electronic-tube firm showed a job polarization on the 2 ends of the skill spectrum. Important questions remain about the complex and varied changes in job content. To meet the needs of MRs, a completely new job-analysis technique is needed to provide a basis for job restructuring and effective worker-job matching. (18 refs.) - *B. Berman.*

Columbia University
New York, New York 10028

1421 **MILLER, GREGORY.** Overcoming difficulties in job placement for the mentally handicapped. *Welfare Reporter*, 21(2):20-26, 1970.

More than 2 million of the nation's 5½ million retardates are of employable age, many with skills and aptitudes which can make them valuable employees. Employability of such individuals is affected by the attitudes of educators, employers, parents, and the retardate himself. Educators have failed to see the need for a practical, vocational orientation in education for the retardate; it is not enough merely to be enrolled in a program. Employer attitudes frequently depend on their own educational level; size of an organization and length of time a retardate is on a job also affect these attitudes. Parental awareness, background, and intelligence, and the retardate's own insights strongly influence the latter's successful vocational adjustment. Education, counseling, and continued follow-up after placement are imperative. (9 refs.) - *B. Berman.*

No address

1422 **KELLY, JAMES M.; & SIMON, ALEX J.** The mentally handicapped as workers—A survey of company experience. *Personnel*, 45(5):58-64, 1969.

A survey of supervisory personnel in the Greater Denver Metropolitan Area revealed that retarded employees who had been rehabilitated and placed in competitive employment rated at least average or better in task performance. Retardates performed routine, repetitive tasks and tired less quickly than nonhandicapped coworkers. The same amount of supervision as for normals was required by 57.5% of the Ss; 7.5% needed less supervision. Although 59% required more than average training, in 92.5% of these cases it was worthwhile. Only 37% of retardates was evaluated as physically slower than normals, and on turnover, tardiness, and absenteeism (which are high-cost factors for the employer), they excelled the nonhandicapped. In job satisfaction, promotion and transfer problems, counseling and discipline, and motivation, retardates gave clear evidence of their superiority to normals, thus demonstrating their employability (in jobs suited to their attitudes, abilities and skills) to employers plagued by high turnover costs. (No refs.) - *B. Berman.*

Idaho State University
Boise, Idaho 83700

1423 **SOLAROVA, S.** Zur Theorie der Mehrfachbehinderungen (A contribution to the theory of multiple handicaps). *Die Rehabilitation*, 9(3):132-139, 1970.

Any disability affects the entire personality, and that fact has an unfavorable influence on the status of the handicapped individual in society. As a matter of principle, any single handicap leads to multiple handicaps. These multiple handicaps may have been caused by one another, or they may exist together, more or less independently. "Consequential" handicaps may be secondary, tertiary, or more. The fact that handicapped individuals are always suffering from multiple handicaps, even though the supervening handicaps may be minor, makes an exact classification of handicaps necessary. When the most important handicap involves human contact, then special education should begin with aid in communicating, and it should lead to a complex therapy which will reach every one of the multiple handicaps. (8 refs.) - *K. Baer.*

Padogogische Hochschule Niedersachsen
Hannover, Germany

1424 **DUROJAIYE, M. O. A.** Occupational choice and attainment of ESN school-leavers. *Educational Research*, 13(1):36-43, 1970.

A comparison of 60 EMR adolescents from special schools with 60 EMRs from special classes in ordinary schools and 60 normals in secondary schools showed that many EMRs made vocational choices as realistic as those of normals, and were more occupationally stable than normals. All children were of low socioeconomic backgrounds; the EMR groups were of comparable IQ (Wechsler, 50-75), and 2 1/2 years behind in reading and arithmetic attainment. Each child was interviewed individually, 18 months before he was due to leave school; 12-18 months after leaving school, 120 were traced and followed up. Occupational choice after leaving school did not differ significantly from the choice made before leaving. Although there was a tendency for more people from special schools to choose manual, unskilled jobs, low intelligence did not appear to influence the choice; EMRs on the whole made suitable choices in relation to job availability. Results showed considerable correlation between job choice and job attainment. Apparently, a gradual development of attitude toward occupational aspiration provided opportunity for mental-role rehearsal that resulted in fulfillment when the EMRs took up their jobs. (18 refs.) - *B. Berman.*

University of Ibadan
Ibadan, Nigeria

1425 Rehabilitation in Australia: Westhaven Association, Dubbo, New South Wales. *International Rehabilitation Review*, 21(3):8-10, 1970.

In Dubbo, a rural community in New South Wales, the Westhaven Special School provides specialized care and training, comparable to that available in the larger cities, for 68 mentally handicapped children, of whom 12 are severely retarded. As the school grew, the Dubbo Sheltered Workshop was developed to provide employment and continued training, and today 30 handicapped adults (moderate MRs, alcoholics, neurotics and psychotics, and severely physically disabled) attend daily and are eventually placed in jobs of a relatively simple nature. For those not suited to a workshop environment, a sheltered farm on 25 acres of land trains handicapped persons in vegetable gardening and pig raising, and also provides needed recreation. At Royal Perth, a rehabilitation hospital for

the disabled provides departments of physiotherapy, occupational therapy, medical social work, speech therapy, and diagnostic radiology. In addition, there are special rehabilitation units for spinal injuries, hemiplegia, rheumatology, orthopedics, and polio. The hospital plans a day center and modern theater operating block for elective orthopedic and urological procedures; it hopes to concentrate medical and paramedical resources in one hospital. (No refs.) - *B. Berman.*

1426 **MOSELEY, M. LOUISE; & WILLS, SUZZANE E.** Eliminate the exclusion principle. *Journal of Health Physical Education Recreation*, 41(7):28, 1970.

The exclusion principle, namely, that physically or sensorially handicapped persons may not become physical-education teachers, must be eliminated. Its elimination would be a boon to the field of physical education and recreation: it would increase the number of teachers and would enable a group of handicapped individuals to become self-supporting. Further, it would fulfill the goal of physical education—correction and improvement of body mechanics and general physical condition through motor activity—for the handicapped as well as for the nonhandicapped. A new curriculum model would be needed, with entry requirements defined in functional terms, rather than in terms of the disability. (No refs.) - *B. Berman.*

State University College
Cortland, New York

1427 **WEAVER, MARTIN.** In place of boredom: Photo feature. *Mental Health*, (Summer):41-46, 1970.

This picture story deals with various commercial jobs which MR hospitalized patients are able to accomplish to fill their time. Many jobs which would be regarded as repetitive and boring by normal employees are interesting and challenging to the MR. Contrary to the usual opinion, MRs can be trained to use machinery safely. (No refs.) - *M-E. Sayre.*

St. Lawrence's Hospital
Caterham, England

TREATMENT AND TRAINING ASPECTS - Therapy

1428 **FOSHAY, KENNETH; & GARRETT, ALICE.** Locomotion devices for cerebral palsied children. *Rehabilitation Record*, 11(2):20-21, 1970.

Assistive devices support the weight of children with cerebral palsy (CP) thus helping them to develop an awareness of the movements of their extremities and allowing them to begin to learn the coordinated movements needed to move about. A simple frame and adjustable seat allows the use of hands and/or feet for the development of independent motion. A prone scooter is used to develop pedaling and steering movements. A modification of the "Irish Mail" scooter has an electric motor and helps the child learn forward and backward motion. A friction safety walker can be used with children of different weights and sizes and helps develop the balance needed for walking. (No refs.) - *J. K. Wyatt.*

No address

1429 **FORGET, (MRS.)** Une experience nouvelle: Le Hatha-Yoga a l'aide des deficients mentaux (A new experiment: Hatha-Yoga to help the mentally deficient). *Nos Enfants Inadaptes*, 33(1):9-10, 1970.

Hatha-Yoga, a special form of Yoga intended solely to improve health, does not involve any risks. In France, it has been tested clinically since the beginning of the century; it should, however, be applied only by those physicians who are

thoroughly familiar with the method. The use of Hatha-Yoga with MRs led to the children expressing feelings of joy and well-being. The strictly verbal instruction given those handicapped children was the same as that generally given to adults, but lessons were directed at each individual so as to give him the feeling that he was the object of special attention. Lessons (1 hour weekly) were well remembered, and improvements in the general condition of the children were noted. Seven case histories are presented briefly. (1 ref.) - *K. Baer.*

No address

1430 **WITENGIER, MARY.** Adaptive playground for physically handicapped children. *Physical Therapy,* 50(6):821-826, 1970.

Preliminary evaluation of a new concept in playgrounds, planned, adapted, and scaled for the limited abilities of physically handicapped children, including those with cerebral palsy, indicates that these children have benefited with increased motor achievement and greater endurance. The Magruder Environmental Therapy Complex was designed in a fashion to stimulate a child's imagination and induce him to explore and reach a goal. This design is based on an effort to provide the child with specific experiences in perception which include: body balance and awareness; laterality (left and right side of body); integration of body sides; directionality; concept of space and spatial relations (external and internalized); depth perception; linearity; tactile, kinesthetic, and temporal awareness; motor planning; and judgment and decision. To enable the handicapped child to achieve these experiences the design capitalizes on a child's motivation to play and encourages him to attempt activities which all children enjoy: rolling down a hill; jumping into hay, leaves, or snow; hiding; crawling; climbing trees or stairs; swinging; walking on logs, fences; splashing; sliding; pretending to ride a horse; making mud pies and snowballs; squeezing through tight places; finding one's way in a maze. Although only informal appraisal of the benefits of the Complex has been made, initial results appear promising. (4 refs.) - *M. S. Fish.*

Seminole County Board of Public Instruction
Sanford, Florida 32771

1431 **SMITH, BARBARA S.; & PHILLIPS, ELIZABETH H.** Treating a hyperactive child. *Physical Therapy,* 50(4):506-510, 1970.

Treatment of a hyperactive, retarded child by reducing external stimuli (except touch) resulted in considerable improvement of the S, indicating that the approach may be promising for other cases of this type. The S, a 4-year-old female with a MA of 7 months, could not talk, understand speech, or learn in nursery school; S was also restless, excitable, nervous, fearful, had poor motor coordination, and preferred objects to people. Treatment took place in a room as free as possible from distraction and stimulation. Passive rolling on a mat was used as a reflex-inhibiting pattern. Only tactile stimulation was employed, and the initial goal was constructive play and consistency in simple movements and bodily positions. After the initial 6-week treatment period, the S showed improvement in motor and manipulative skills, self feeding, and eye contact. Less structured treatment was next employed, and 1½ years after initial treatment began, the S was able to feed and help dress herself, had developed a 10-word vocabulary, and was enrolled and progressing in a school program. Constructive play, progress in toilet training, and interaction with other children were still limited, however. (6 refs.) - *M. S. Fish.*

Central Wisconsin Colony and Training School
Madison, Wisconsin 53704

1432 **PANZER, JAMES D.; & ATKINSON, W. H.** Tricyanoaminopropene (TCAP): Lack of improvement of mentation in mentally retarded children. *Psychosomatics,* 10(2):136-140, 1969.

Administration of both high and low doses of tricyanoaminopropene (TCAP) to a group of MR children had no positive effect on increasing the mental capacity of the Ss. The initial study group (37 MR school children with IQ between 65-85 and a CA between 10-16 yrs) was randomly assigned into a TCAP and a placebo group, the former receiving 100 mg/day of the drug for 8 weeks. A later study utilizing 20 of these Ss was carried out in which the drug group received 300 mg/day of TCAP for 6 weeks. Psychological evaluation of the pilot group included the Stanford Achievement Battery, Auditory Comprehension, Motor Ability (formboard and dexterity), Wechsler Intelligence Scale for Children, Incidental Learning Task, and Paired Associates Test. The

latter 3 tests were utilized for evaluation in the second study since some trends were noted in the pilot study for these tests. These trends, however, were not statistically significant for either of the 2 studies. Analyses of blood and urine and physical examinations disclosed no abnormal drug-related changes, and few side effects were noted. (18 refs.) - *M. S. Fish.*

Upjohn Company
Kalamazoo, Michigan 49001

1433 **DeHAVEN, GEORGE E.; & MORDOCK, JOHN B.** Coordination exercises for children with minimal cerebral dysfunction. *Physical Therapy*, 50(3):337-342, 1970.

In the therapy of children with minimal cerebral dysfunction, the use of remedial exercises designed specifically to improve skills in manual dexterity and precision in movement has been shown to have a significant effect in improving balance and performance of tasks requiring fine control of distal muscles. Ss were 40 children (CA 8-12 yrs) institutionalized for treatment of brain damage and emotional disturbances but diagnosed as demonstrating minimal cerebral dysfunction. Initial evaluation by means of the Devereux Test of Extremity Coordination (to examine deficits in visual-motor movement proprioceptive movement, alternate motion rate, rhythmic alternate motion, static balance, and dynamic balance) indicated deficits in most areas, particularly in fine motor skill. Based on these profiles, 2 equivalent groups (20 Ss each) were selected and 1 group was given a daily 30-minute basic exercise program designed to develop body control and image, provide socializing opportunities, and develop a better self-concept. The second group was given the same daily basic exercise program, but for only 15 minutes, and during the remaining time performed exercises designed to improve fine motor skills and static and dynamic balance. Reevaluation of both groups by the Devereux test after the 6-month program showed that the second group made significantly more gains in tasks involving rate of alternate motion in distal body segments (finger, foot, and heel-toe tapping and finger wiggle). The groups performed equally on tasks involving control of larger, more proximal muscles and balance tasks. (16 refs.) - *M. S. Fish.*

Devereux Schools
Devon, Pennsylvania 19333

1434 **AZBELL, JOSEPH H.; & GARRISON, ELLEN J.** Scooter chair for children with brain damage. *Physical Therapy*, 50(7):1051-1053, 1970.

A safe, inexpensive scooter chair for use by a brain-damaged child who is capable of some activity is described. The design of the scooter positions the child near the floor in reach of toys and provides him with an independent means of mobility. Use of the chair affords active exercise since the child moves the chair himself by flexion of the leg and permits participation in a variety of activities which are denied by use of a relaxing chair or a wheelchair. The scooter is simple to construct from readily available materials. (No refs.) - *M. S. Fish.*

West Seneca State School
West Seneca, New York 14224

1435 Therapeutic choice in pediatrics. *Lancet*, 2(7687):1351, 1970.

In prescribing drugs for children, more mistakes have been due to neglect or inattention to details than to insufficient knowledge or skill. Most prescribing falls far short of the ideal: full knowledge of the relative merits of all available treatments and complete understanding of the individual patient. There are no absolutes, however, since there are none in drug specificity, but harmful effects are most likely in developing organs or those with a high metabolic turnover. In clinical investigations, at times, despite the risk, there is no adequate substitute for the use of children, especially in predominantly childhood diseases. The complexity of trial programs is illustrated in acute leukemia, where there are at least 8 potentially useful agents. Great strides in therapy have been made in the past 30 years, despite the long life of some misguided, once fashionable, procedures. (4 refs.) - *B. Berman.*

1436 **BRANNAN, STEVE.** Outdoor education ...stimulus for the mentally retarded. *Oregon Education*, 43(12):8-11, 1969.

A special summer camping program involving 40 EMRs and conducted for teachers of EMRs by Portland State University has demonstrated a tremendous range of individual differences in this

supposedly homogeneous group, and the inaccuracy of generalizations about EMRs when they are seen only in the classroom setting. The camping experience made teaching and learning more meaningful and provided students with greater motivation by applying their school learning (mathematics, reading and spelling, safety and health, and language development) to practical outdoor situations. The camp provided a proving ground for academic knowledge, with teachers and students actively participating in planning, organizing, and carrying out a wide variety of recreational activities. Social interaction increased among teachers and children; new behaviors provided teachers with new insights into MRs and made evident such factors as parental overprotectiveness. The camping experience yielded mutual understanding and acceptance, and stimulated recommendations to the University to broaden its training program (more flexible scheduling, increased self-directed activity, morning assemblies and various ceremonies). The education-recreation concept is recommended for training special and regular educators. (No refs.) - *B. Berman.*

Portland State University
Portland, Oregon

1437 HICKEY, CAROLYN. Tires, innertubes useful physical therapy tools. *ICRH Newsletter,* 4(2):1, 1969.

TMRs have a need for developing motor-perceptual skills, finger and arm strength, and body coordination—all of which can be facilitated with imaginative use of tires and innertubes. Tires arranged in a line or circle, plus the use of a bean bag, provide numerous jumping, touching, and body-posture games and activities. Inner tubes cut into strips can be used for various hand-manipulative and body-coordination games and exercises. When fun and games are integrated with a familiar song, TMR boys and girls enjoy the challenge and manifest positive responses. (No refs.) - *B. Berman.*

No address

1438 GROVE, FRANCES; & WEBER, YVONNE. Aquatic therapy: A real first step to rehabilitation. *Journal of Health Physical Education Recreation,* 41(8):65-66, 1970.

For MRs, swimming offers motivation, social participation in noncompetitive, uninhibited surroundings, and performance at individual capability levels. Dividing retardates into groups—according to aptitude, mental and chronological age, IQ, personality, and physical disability—is the best procedure. Special emphasis should be given to breath control, and to eliminating fear of water by fun and games. Instructors must know each retardate's personality and behavior patterns, and utilize the reinforcements of praise and reward. At Pacific State Hospital, in the past 7 years, more than 400 mentally and physically handicapped persons have received instruction and attained various swimming certificates. Various teaching methods and aids are employed, including water balls, inflated water animals, and diving rings. The programs have provided definite rehabilitation. (No refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California

1439 JAMPOLSKY, GERALD G. Use of hypnosis and sensory motor stimulation to aid children with learning problems. *Journal of Learning Disabilities,* 3(11):570-575, 1970.

Teaching a lightly hypnotized child to use tactile and kinesthetic senses was successful in correcting a number reversal defect. Five children (6.5-9 years old) with this disability were treated in this manner for 10-14 days; number reversal was eliminated in all cases. In five untreated controls, one child had no errors, and 3 had more errors after 2 weeks. Some regression was noted in both groups after a 2-week rest. All of these children had a concrete (not abstract) mental response. Hypnosis was achieved by a nonvisual technique, and posthypnotic suggestion was utilized to encourage learning numbers by feel rather than sight. Teaching used operant conditioning and vibratory, touch, and muscle memory. (14 refs.) - *E. Kravitz.*

No address

1440 FINK, HAROLD KENNETH. Motivating a mentally defective teenage girl. *Devereux Schools Forum,* 6(1):27-29, 1970.

The therapist's approach to aiding mentally-limited children usually includes the effort to find

a key which he can utilize in motivating his S, or, when motivation is present, a way to use it productively. In the case of a 12-year-old MR female (IQ 65), the enthusiasm and eagerness to attend the therapy sessions indicated that motivation was already present. Quite by accident, the therapist noted an attempt by the S to pick out a tune on his piano; he then included instruction on the piano in each session, and the parents cooperated by providing an instrument at home for the S to use. The participation of the S in an individual creative activity which gave her pleasure appeared to be of considerable aid in her therapeutic program. (No refs.) - *M. S. Fish.*

Fort Lauderdale University
Fort Lauderdale, Florida

1441 **DUNHAM, PETER E.** The use of Plastazote in a subnormality hospital. *Nursing Mirror*, 130(7):40-41, 1970.

Plastazote is foam polyethylene which may be heated and moulded to any required shape; it remains supportive but not rigid. It has been used at one MR hospital to: promote corrective posture; aid learning of basic habits, such as use of toothbrushes and tableware, since the material can be moulded in the shape of the patient's hand and implements inserted into it; and to reduce self-mutilation by forming arm restraints. When used with individuals with spasticity, it helps to prevent contractures or deformities; with flaccid paralytics, it provides support to the back and neck, greatly reducing problems of feeding, drinking, and general nursing care. (No refs.) - *M-E. Sayre.*

Cell Barnes Hospital
St. Albans, Hertfordshire, England

1442 **POTHIER, PATRICIA C.** Therapeutic handling of the severely handicapped child. *American Journal of Nursing*, 71(2):321-324, 1971.

In line with the philosophy that society has an obligation to give the best possible nursing care to keep SMR children comfortable and to foster any potential for growth which they have, specific handling techniques should be developed and taught to those working with such children. Procedures for bathing, changing, feeding, and positioning must be incorporated into routine nursing care if the benefits of physical therapy are to be maintained. A course for training nurses in these techniques in a 6 week workshop involved assessing children with severe physical and mental handicaps, using the assessment to plan therapeutic nursing care, increasing nurses' awareness of their own strengths and weaknesses, and promoting sufficient security so that nurses using the new patterns would be able to initiate change in their work settings. The techniques were used with a 2-year-old girl with profound MR and cerebral palsy traceable to a congenital cerebral deficit and a 5-year-old boy born without a brain and functioning with only a brain stem. (1 ref.) - *M-E. Sayre.*

University of California
San Francisco, California

1443 **ORRISS, HARRY D.** A failure in communications? *Nursing Mirror*, 130(19):43-44, 1970.

A group of patient-operated selector mechanisms has been developed at Stoke Mandeville Hospital, Buckinghamshire, England, for use by individuals with any of a variety of handicapping conditions, including cerebral palsy. The equipment consists of an electronic controller to receive input signals from the patient by either residual muscle power in fingers or feet or by air pressure and suction from the mouth. It then emits suitable output voltages to activate the selected equipment. A unit available through the National Health Service costs about £300. Heater lights, radio, television, bell and buzzer alarm system, an intercom to front door, a door lock, tape recorder, and loudspeaking telephone are among the devices which can be turned on and off. A more sophisticated version will allow for changing television channels, selecting different heats from the heater, controlling a multistation intercom, and related functions. An electric typewriter can be operated by some, using mouth or residual muscular pressure with a grid key. (No refs.) - *M-E. Sayre.*

No address

1444 **HOLCOMB, FERRIN H.; TAYLOR, PAUL P.; & SAUNDERS, WILLIAM A.** Comparison of two oral hygiene devices for the physically handicapped. *Journal of Dentistry for Children*, 37(4):325-330, 1970.

Because children suffering from physical handicaps (including MR) are frequently incapable of using ordinary toothbrushes, the use of the Masti-Clean, a chewable device made of a medical grade of silicone rubber, for oral hygiene was compared with the toothbrush. Ss were 74 patients at Texas Scottish Rite Hospital for Crippled Children at Dallas; MRs were excluded as Ss. Variables studied included tooth-cleaning ability, sex, age (7-11 and 12-15), and presence or absence of ideal occlusion. The difference between the scores of children using the Masti-Clean and those using the toothbrush was not statistically significant. Children aged 12 to 15 years using a toothbrush were the only ones to improve significantly. Results confirmed earlier findings that mouth cleanliness improves with age and improved ability to brush properly, females had better oral hygiene, and the arch form and type of occlusion have a direct effect on cleanliness of the children's teeth. (12 refs.) - *M-E. Sayre.*

No address

PROGRAMMATIC ASPECTS – Planning and Legislative

1445 **MASSACHUSETTS. MENTAL HEALTH DEPARTMENT.** *Highlights of a Plan for Mental Retardation Facilities Construction Program.* Boston, Massachusetts, 1969, 18 p.

The number of MRs and their families in the Commonwealth of Massachusetts is estimated, and a plan for their perceived needs is proposed. Based upon an IQ line of 75 on a standardized test, it has been found that approximately 55,000 citizens are in need of special help, including special education. Although 90 percent of all MRs live in the community, the overcrowding of state schools for MRs is one of the major problems. Moreover, there is a great discrepancy between existing and needed day care services. Alternatives to new building programs must be found. Unitization has been proposed for every resident in order to provide for an admission as well as a treatment and training plan in addition to a discharge plan, where feasible. Together with the unitization of the 5 state schools, equal attention has to be devoted to the development of necessary community programs and services. At the present time, more adequate day care services and increased community residential programs, on a day or long-term basis, are the top priorities. (No refs.) - *B. J. Grylack.*

Department of Mental Health
Boston, Massachusetts

1446 **BOGGS, ELIZABETH M.** Federal legislation. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 7, p. 103-127.

A brief review of federal legislation in relation to MR may be conveniently divided into 4 periods: the pre-1945 era, known as the professional years; the period of 1945 to 1955, the parents' years; 1955 to 1960, the congressional years; and 1960 to 1966, the presidential years. The professional years were characterized principally by work by psychologists and educators who took the lead in special education. Pressures of the depression and the war kept financial aid for construction and manpower for MR care and investigation to a low level. Studies of the Office of Education, the Children's Bureau, the Bureau of the Census, and, finally, the National Mental Health Act of 1946 constituted the principal Federal effort and support. The parents' years included formal organization of the National Association for Retarded Children (NARC) as a voice of concerned parents of MR children. Existing Federal agencies began to increase their support, and the NARC proposed a survey in 1954. This period also saw NARC focus on Congressman Fogarty's interest in retardation; he was able to earmark funds to 2 of the institutes of the National Institutes of Health (NIH). As a consequence, grant applications in MR began to flow into the National Institute of Mental Health

(NIMH). The congressional years saw the rapid growth of the NIH and the NIMH and the appropriation of additional funds to those organizations for research in MR, mainly through the efforts of Fogarty and Senator Hill. The Office of Education also came forward with additional proposals for educating the MR. The NARC pressed for a comprehensive program within the Department of Health, Education and Welfare (DHEW) and for changes in certain laws and reinterpretation of others. Activity grew during the late 1950's and culminated in the 1960 White House Conference on Children and Youth, where retardation was a major concern. The presidential years were highlighted principally by the strong personal interest of President Kennedy and his immediate family in MR, the establishment of a new institute (National Institute of Child Health and Human Development) within the NIH, increases in other DHEW programs, and, finally, the enactment of the first bill to implement the program to combat MR, followed by another in 1963 to construct facilities for use specifically for MR. Other bills were passed, other acts were amended, and financial support continued to grow during this period. After 1966 the legislative initiative in MR reverted to the Congress. (31 refs.) - *M. S. Fish.*

1447 **MARTIN, KNUTE.** Guardianship. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 2, p. 21-31.

The legal device of guardianship of the dependent and marginally competent members of society now receives unprecedented attention compared to that given it in the past. Present social and legislative climates now promise unique opportunities to make advances and changes in the presently inadequate patterns of care for the retardate. Of particular concern is the need for these improvements in the laws of guardianship to include the MR adult who, in the past, has been the victim of unusually harsh and inadequate legal provisions. The institution of guardianship arises from conceptions of family organization and has, as a consequence, focused principally on the protection of infants and minors. Guardianship can be natural (parent-child relationship until the child or parent dies or the child reaches legal age), testamentary (designation of a guardian via a last will or testament), or court appointed. In the case of the retarded individual, legal parental authority, obtained by court permission, is necessary when the retarded child reaches legal age and natural guardianship ceases. Guardianship now involves 2 separate functions: the control of the person and the care of the estate; however, this separation often results in the strictly legal conception of guardianship being inadequate for the needs of the retarded adult. Recent advances in the field of retardation have largely neglected the legal and social implications of guardianship, particularly as a mechanism for supplying the needs of the retardate. Recent studies have shown that the principal issues are: delineation of personal guardianship, mechanisms for delivery, and having protection correspond with need. The main feature of present laws is the fiscal protection of the community by excluding the incompetent individual, usually by institutionalization. The high costs of care have made this institutionalization the predominant form of guardianship. Categories of the agents of guardianship include specified employees of a public agency, a relative or friend, a professional guardian, usually with several wards, or staff members of a voluntary group. While in most states the agent is a relative or friend, 7 states now have programs in public guardianship, and in the state of Washington parents can petition the state to serve as a co-custodian. As many interrelated factors which alter the traditional philosophy of guardianship appear, the best solution may be to have more alternative forms of guardianship. The problem of varying degrees of disability argues for the need of limited forms of guardianship rather than the all-or-none principle now embodied in most existing statutes, which stigmatizes the borderline retardate, deprives him of the right to make decisions of which he is capable, and limits his ability to achieve admission to full community status. Most legal approaches to guardianship of the retarded still fall far short of the democratic concept of equality and justice. (36 refs.) - *M. S. Fish.*

1448 **ALLEN, RICHARD C.** The retarded offender: Unrecognized in court and untreated in prison. *Federal Probation*, 32(3):22-27, 1968.

Mental deficiency, when present, should be disclosed at or prior to trial of a suspected offender, and when the mental condition and the unlawful act are related, the offender should receive treatment appropriate to his condition. Although the 1966 Report of the President's Commission on Crime in the District of Columbia provided more

than 200 recommendations, in only one of them was reference made to MR offenders. Few facts are known about MR as it relates to crime. Opinions vary from claims that MR and crime almost always have a causal relationship to more recent ones that no such relationship exists. A recent survey, which had an 80% response from correctional institutions housing approximately 200,000 offenders, indicated that about 20,000 (9.5%) of the inmates were MR (IQ below 70), compared to an estimated incidence of about 3% in the general population, and about 1.6% had IQ scores between 55 and 17. The survey also emphasized the paucity of professional manpower available in these institutions to aid the MR inmate. In a 3-year study of 6 adult correctional institutions in 6 states, field workers selected random samples of MR inmates for retesting and found that institutional testing had been a reliable indicator of MR. The mean IQ (Wechsler Adult Intelligence Scale, Draw-a-Person, and Thematic Apperception tests) on retest of 51 inmates was 66 compared with a mean IQ of 62.4 determined by the institutional test. Of this group 72% had committed crimes against the person, including 36% imprisoned for some degree of homicide and nearly 21% for first degree murder. Unlike mental disease, MR does not, in most jurisdictions, figure prominently in determining criminal responsibility. Frequently the issue is never raised for a variety of reasons. (27 refs.) - *M. S. Fish.*

George Washington University
Washington, D. C.

1449 **U. S. HEALTH, EDUCATION, & WELFARE DEPARTMENT.** *Mental Retardation Activities of the Department of Health, Education, and Welfare — January 1971.* Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1971, 86 p. (Price $1)

The U. S. Department of Health, Education, and Welfare provides a variety of services for the mentally retarded. These multidisciplinary programs cover most aspects of a retarded person's life. The current mental retardation program activities of HEW, as described in their annual report, include the following areas: preventive services, basic and supportive services, training of personnel, research, construction, and income maintenance. During 1970, over $550 million was obligated by HEW for mental retardation programs. - *D. Fergerson.*

1450 Education of mentally handicapped. *Lancet,* 2(7664):157, 1970.

A bill to transfer responsibility for the education of handicapped children from local health authorities to local education authorities has had a second reading in the House of Commons. Education would take place at junior training centers as a part of special education and at hospitals for mentally handicapped children. Only a small number of truly qualified teachers would be available at first, but there would be attempts to educate more qualified teachers in less than the usual 5-year period. (No refs.) - *E. Kravitz.*

1451 **RICHMOND, JULIUS B.; & WEINBERGER, HOWARD L.** Session II - Program implications of new knowledge regarding the physical, intellectual, and emotional growth and development and the unmet needs of children and youth. *American Journal of Public Health,* 60(4 - Supplement):23-67, 1970. (Paper presented at Conference on Health Services for Children and Youth, March 18-20, 1969.)

The solution to many of today's health problems necessitates improved housing, clothing, nutrition, education, welfare, and community planning, as well as health planning. A comprehensive approach to improvement of the quality of life generally — especially for low-income groups — is basic to any program which aims at the improvement of the health of children and their families specifically. Infant and early child care require special attention if we are to lay an adequate foundation for disrupting the circularity of the poverty cycle from one generation to the next. The relative lag in the lowering of prematurity and infant morbidity and mortality rates in the United States merits continuity of both treatment and preventive health services which should include adequate prenatal care, as well as programs directed toward accident prevention and improved dental health. The relationships between psychological effectiveness and learning are so interwoven that greater attention needs to be given to specific child-rearing practices and environmental circumstances which foster the mental health and learning capacity of individual children. Efforts at improving the therapeutic resources for children with emotional and learning problems must be continued and expanded. The great shortages of personnel and facilities only emphasize the importance of developing new approaches to bring services to all in

need. The current emphasis on community health services and their delivery should not be permitted to become an alternative to continuing support for research and training, especially in the behavioral sciences. Because of the complexity of federal programs for children and their families, each with their diverse administrations, some sort of supra-departmental coordinating council is needed to effect the required better service and long-range planning. (75 refs.) - *J. C. Moody.*

State University of New York
Upstate Medical Center
Syracuse, New York

1452 Mentally handicapped care project. *Nursing Mirror,* 131 3):3, 1970.

The Department of Health and Social Security (England) has undertaken a project in which each regional hospital board is to appoint a training project officer to help hospitals for the mentally handicapped make the fullest possible use of advances in methods of care, to encourage them to use good ideas developed by their own and other hospital staffs, and to strengthen the links of these hospitals with the community. Besides training staff on the wards, the project will also encourage discussion among senior staff of all disciplines as to the forms of management and organization which can most effectively realize these aims. (No refs.) - *J. C. Moody.*

1453 **KITCHIN, C. HARCOURT.** Needs of the backward child. *Nursing Mirror,* 130(3):14-15, 1970.

"Priority in Resources," the second conference of the National Society for Mentally Handicapped Children held in December 1969 in London, stressed the need for adequate community facilities to care for handicapped children. Until such facilities are provided, however, most retarded children must continue to be hospitalized. Therefore of immediate importance are modernization of hospital buildings, improved standards of food, development of staff training programs, and organization of volunteer help. Reports of a successful experiment in intensively treating a small group of patients in one hospital and the consequent improvement in staff morale point up the necessity of reducing overcrowded wards as quickly as possible. Present inadequate standards of care are maintained only by gross exploitation of dedicated nurses and other staff. Upgrading the care of the mentally handicapped will require a larger part of the National Hospital Service budget than is currently allocated, as well as more effective bureaucratic policies and management of available resources. Public support would probably be forthcoming if people and politicians could be made to realize the current inadequacy of conditions in mental hospitals and understand that money spent on MR is not wasted on a hopeless cause. (No refs.) - *J. C. Moody.*

No address

1454 **DAVID, HENRY P.** Relevance of programs for emotionally disturbed youth in other lands. *Community Mental Health Journal,* 6(3):203-209, 1970.

A survey of current trends in organization and delivery of services for emotionally disturbed and mentally handicapped children in more than 40 nations was conducted on behalf of the Joint Commission on Mental Health of Children. Comparison of approaches in other countries with current practices in the United States revealed more flexibility and willingness to experiment abroad, in both administrative and therapeutic aspects of care, with ideological differences often strongly affecting the organization, range, and quantity of services provided. Of particular interest is the heterogeneity of services for children. Nearly all countries surveyed reported some mental health facilities for children, with the number of separate units for children on the increase. These are facilities generally directed by physicians and located in psychiatric or pediatric hospitals. Children having severe emotional disorders may or may not be grouped with those suffering from autism, mental retardation, sensory or motor handicaps, mild delinquency or extreme cultural deprivation; the groupings depend upon available local facilities and prevailing attitudes. (15 refs.) - *M-E. Sayre.*

International Research Institute
American Institutes for Research
Silver Spring, Maryland 20910

PROGRAMMATIC ASPECTS – Community

1455 **DOGGET, BILL J.** Programs for multiply handicapped retardates. *Texas Medicine,* 66(4):56-59, 1970.

The multiply handicapped retardate suffers from difficulties within himself and from those imposed by society and, therefore, must be treated in a multi-disciplinary fashion. He may early develop the notion he is a loser, become involved in adverse interpersonal relations, and suffer low self-esteem; he is disappointed with himself and others. We must recognize this 'physio-psycho-socio-cultural' complex in which he is caught and involve ourselves in the forces that affect him. Programs, services, and vocational rehabilitation for MRs in Texas have reached unprecedented size and scope; in 1969 alone, $7 million was spent for renovation and new construction of facilities. These resources must be used effectively. One must be constantly alert to the problem and its needs, avoid waste, and never yield to despair. (No refs.) - *B. Berman.*

Brownwood State Home and School for Girls
Brownwood, Texas 76801

1456 **KOTT, MAURICE G.** Division of mental retardation. *Welfare Reporter,* 21(1):20-27, 1970.

The New Jersey Division of Mental Retardation is concerned with systematic long-range planning and provision of adequate clinical and social services, facilities, personnel, and public and private liaison for retardates. It has jurisdiction over all State residential facilities including financing, inspection, construction, and behavior-modification programs. A limited program of behavior modification, which is an ongoing part of the total MR program, assays new therapeutic techniques. Additional new programs include expanded orthopedic surgery and use of foster grandparents in "model-city" programs. In the past year, employee training, day care, and community services have been emphasized, with federal support available. The Mental Retardation Planning Board, established by the Governor, has developed effective procedures, and the Bureau of Field Services has increased its case loads to a total of 4,632. Long waiting lists attest that this is an unrealistic workload and suggest a need for more facilities. (No refs.) - *B. Berman.*

New Jersey Division of Mental Retardation
Trenton, New Jersey

1457 **CHAR, S. V.** Guardianship plan or trusteeship plan of the federation for the welfare of the mentally retarded (India). *Journal of Rehabilitation in Asia,* 11(3):73-77, 1970.

The trusteeship plan provides for the continued care, comfort, nurture, education, training, and rehabilitation of MRs when parents are unable to do so because of death or other causes. The plan provides a specially appointed visitor who keeps in close touch with the child or adult and watches over his affairs. In the case of a plenary guardianship, the guardian has full discretion. The scope of a limited guardianship may be specified in the parent's will. Parents can make continuing financial provisions for an MR child by drawing a trust agreement in the will or by investing in endowment life insurance policies posta certificates, or the Government Unit Trust Scheme. (No refs.) - *J. K. Wyatt.*

No address

1458 **BROWN, GEORGE W.** The diagnosis and treatment of children with learning and developmental problems: A community service for medical group practice. *Rehabilitation Literature,* 31(8):234-238, 243, 1970.

A "team" resource for the diagnosis and treatment of children with learning and developmental problems at the Lovelace Clinic (Albuquerque, New

Mexico) provides medical, psychological, speech and language, and educational services. Primary medical contact is made by the pediatrician who obtains developmental and health information, academic records, and information on personality and temperament. Special studies are made by the various medical specialties when requested. At the first visit, parents are given details regarding evaluation costs, reasons for appointments and tests, an explanation of the evaluation process, and notification of the final informing meeting at which all information is presented. When all reports have been received and diagnostic studies have been completed, the parents are seen by a coordinator and appropriate members of the clinic team. Test results are explained, parent questions are answered, and arrangement for future contacts is made. Parents are encouraged to join appropriate community organizations. Cost of evaluation ranges from $110 to $200. Clear, cogent, practical reports with carefully used diagnostic labels are prepared for the school, special services, and other involved service agencies. (9 refs.) - *J. K. Wyatt.*

Lovelace Clinic
Albuquerque, New Mexico

1459 **SIMANIS, JOSEPH.** Social security abroad: Mental retardation in four countries. *Social Security Bulletin*, 33(5):17-23, 1970.

As of December 1968, there were 153,000 MRs in the United States receiving social security benefits. Four countries (Sweden, the Netherlands, United Kingdom, and the Soviet Union) have been cited by the President's Panel on Mental Retardation as having desirable public programs for retardates. Sweden provides a special allowance (3420 kroner) for families with severely handicapped children; the Netherlands has special family allowances up to age 27; the United Kingdom grants allowances for retardates to age 16, after which such children are eligible for supplementary benefits of 5 pounds a week; the Soviet Union provides very small allowances but only to families with 4 or more children and the eligible children must be under age 5. Medical benefits and residential care and education of retarded children in these countries are described. Estimtes of school-age children who are retarded are: Sweden, 0.8%; Netherlands, 3%; United Kindgom, 2%; and Soviet Union, 1%. (These countries have varying IQ cut-off points for retardation.) Their facilities for post-school age MRs include sheltered workshops, group homes, training centers, and special homes. (6 refs.) - *B. Berman.*

Office of Research & Statistics,
Social Security Board
Washington, D. C.

1460 **DE WACHTER, JAN.** Bedenkingen rond een preventieve gedachte op sociaal-psychologisch domein (Some observations on preventive methods in the socio-psychologic field). *Amentia*, 22(October): 20-22, 1970.

The high percentage of MRs in the lowest socio-economic classes has often been observed and related to factors such as low income, bad housing, and unemployment. Heber's Milwaukee study has demonstrated that it is not so much the socio-economic factors but rather the cultural-familial ones which are to blame. Intensive education for "seriously threatened children" starts when the children reach their fourth month; it has significantly raised IQ levels. Part of the program consists of training mothers to be better housewives and educators. This method of teaching potentially retarded children should be used in Belgium before the family can have an indelible influence on them. (No refs.) - *G. Van Massenhove.*

Consultatiebureau voor gehandicapten
Brussels, Belgium

1461 Interview met voorzitter Dassen van Antwerpen (An interview with chairman Dassen of Antwerp). *Amentia*, 22(October):5-10, 1970.

Judge A. Dassen, chairman of the Antwerp section of the Belgian National Association for Helping the Mentally Handicapped, details what his section has achieved in terms of building workshops for MR and the physically handicapped, securing the collaboration of industrial corporations, organizing adapted sport and recreation facilities, collaborating with specialized schools, securing local government subsidies, and developing other forms of fund-raising. (No refs.) - *G. Van Massenhove.*

1462 On making wills. *Rehabilitation in Australia*, 7(2):15, 1970.

Satisfactory ways of making provision for an MR child are to bequeath a specific sum to the executors to be held in trust for the child's benefit for life or to leave a specific share of an estate to the trustee for the benefit of the MR child. In both cases, the trustees should have absolute discretion in regard to the application of monies for the care and advancement of the child. Express provisions should be made for the disposition of remaining monies at the death of the MR individual. Specific requests, residuary gifts, or income from a trust fund should not be directly bequeathed to an MR individual. This can result in the payment of 2 death duties, no will at the death of the MR individual, the freezing of the property, or the loss of the child's invalid pension. Two executors should be appointed. These should be 2 independent persons or 1 normal child and an independent person or trustee company. (No refs.) - *J. K. Wyatt.*

1463 **BOGGS, ELIZABETH M.** The new guardianship. *Deficience Mentale/Mental Retardation,* 20(2):2-6, 1970. (French translation, p. 38-42.)

Because of increasing interest in the development of individual life plans for MRs, the roles of guardians have expanded to include protector, personal coordinator, advocate, and counselor. Voluntary bodies and governmental agencies seeking to develop professional guardianship services should assist in developing a well-organized counseling service for MRs and their families, establishing training programs for prospective guardians, developing a roster of qualified guardians, retaining a panel of experts to provide guardians with assistance, and providing for the management of community trust funds which combine the capital of a group of MRs for more economical management. A public guardianship agency for MRs should not be located in an agency responsible for direct care, training and treatment services. (No refs.) - *J. K. Wyatt.*

No address

1464 **FERRELL, C. RICHARD; TOKSTAD, GARY C.; LISTELLA, GUIDO M.; & JACKSON, JAY.** Influence of a therapeutic community on behavior and adjustment of defective delinquents. *Mental Retardation,* 7(6):6-9, 1969.

Participation in a therapeutic community approach by adult, male MR delinquents (CA range 19 to 35) resulted in a significant increase (at the .01 level) in community, halfway house, or more-open institutional environment placements. The program reflected a model of the normal socialization process, and assumed that patients were normal with respect to their dignity and capacity for rationality and responsibility. Patients were confronted with, and required to take responsibility for, the effects of their actions. They participated with the staff in decision-making. The role system was flexible and expansive, and communication was open. Meetings of patients and staff were held twice weekly to discuss problems relevant to the community. Quality of participation in these meetings improved significantly (.001 level) over a 13-month period. Patients who moved out of the institution to superior placements showed significant (.001 level) improvement in the quality of participation in patient-staff meetings. Patients who went to superior placements improved significantly more than patients who went to inferior placements (.05 level). Age and intelligence did not appear related to improvement. (5 refs.) - *J. K. Wyatt.*

Fairview Hospital and Training Center
Salem, Oregon

1465 **CLARK, ANN D.** Program evaluation—The insider's concern. *Mental Retardation,* 7(6):61-62, 1969.

To measure the efficacy of a program, evaluation procedures should begin by adequately defining program objectives. These objectives should then be translated into specific behaviors which can be measured. Measuring instruments should be surveyed and decisions made about the relative value of standardized or inside procedures. Evaluation of the handicapped is concerned with measuring improvement in sociability, school related skills, and learning, and should not be bound by the rigid rules of research methodology. (4 refs.) - *J. K. Wyatt.*

University of Wisconsin
Madison, Wisconsin

1466 **USDANE, WILLIAM M.** Criteria for adult community programming in mental retardation. *Mental Retardation,* 7(6):43-46, 1969.

Six criteria for the assessment of appropriate adult community programing for MRs were derived from innovative demonstration projects concerned with rehabilitation. In addition to professional staff members, rehabilitation teams need "bridging" personnel who will help MRs adjust to life in the community. Employment facilities should be used as an essential extension of the vocational evaluation and work adjustment process. The rehabilitation should provide for continued re-evaluation of individual progress and capabilities. Achievement expectations should be flexible and based on the concept of continuing improvement. Follow-up or longitudinal studies should be emphasized. Recreation activities that promote health and growth should be included in all adult programs. An outline of events which can be used to promote strategies for the innovation and use of significant research and demonstration projects is included. (22 refs.) - *J. K. Wyatt.*

Social and Rehabilitation Service
Department of Health, Education, and Welfare
Washington, D. C.

1467 **BEIGEL, ALLAN.** Planning for the development of a community mental health center. II. Planning of services. *Community Mental Health Journal,* 6(5):356-365, 1970.

The essential basic services for a Community Mental Health Center are inpatient, outpatient, partial hospitalization, emergency, and consultation and education. Other possible areas of development could provide additional special services for children, alcoholics drug abuse, suicide prevention, delinquency, geriatrics, and MR. The emphasis in essential services should be on the needs of the catchment area as well as on what is readily available. Basic services are described in terms of mental health needs. (52 refs.) - *J. K. Wyatt.*

College of Medicine
University of Arizona
Tucson, Arizona

1468 **BAYES, KENNETH; & FRANCKLIN, SANDRA.** The therapeutic environment. In: Bayes, K.; & Francklin, S., eds. *Designing for the Handicapped.* London, England, George Godwin, 1971, p. 18-25.

The concept of community oriented care for all MRs is growing slowly. Although only a small portion of the most seriously retarded population has severe health problems, mental subnormality has been regarded traditionally as a branch of medicine. Despite a rapid increase in community provisions, the number of SMRs housed in inappropriate institutions is increasing as well. The provision of a complex of special facilities to supplement those used by the normal population and the establishment of satisfactory housing, education, work training, and work opportunities for MRs within the normal community are vital for a therapeutic environment. Detailed environmental improvements could be made in private homes and in community facilities, especially entertainment and recreational facilities, in order to ease the task of care and to assist in the development of the individual. Furthermore, the replacement, upgrading, and replanning of facilities on existing hospital campuses could make them more responsive to the needs of SMRs in the light of changing methods of care and changing public attitudes. (No refs.) - *B. J. Grylack.*

1469 **ROBERTO DEL RIO HOSPITAL, PEDIATRIC DEPARTMENT.** Programa de atencion del lactante menor con dano neurologico en el area norte de Santiago (Care program for infants with neurological defects in the northern area of Santiago). *Boletin del Instituto Interamericano del Nino,* 44(173):177-183, 1970.

After an introduction on the frequency, seriousness, and causes of MR, as well as on the urban area in which the program has to be implemented, the report details the program's general scope, different aspects of the work to be done, concrete action taken in every aspect, general methodology, types of patients, resources, and way of assessing the results. (No refs.) - *G. Van Massenhove.*

Roberto del Rio Hospital
Santiago, Chile

1470 **SOLIS QUIROGA, HECTOR.** Algunos aspectos legislativos de la deficiencia mental en Mexico (Some legal aspects of mental deficiency in Mexico). *Boletin del Instituto Interamericano del Nino,* 44(173):189-201, 1970.

After outlining some basic concepts of MR which may be mentioned in legal documents, a detailed

and critical survey of Mexican law relevant to MR is given including the Constitution of 1917, the Civil Code of 1932, the Penal Code of 1931, and the legal origin of public education. Additional reforms need to be introduced which consider the MRs' potential and rights. There should be a more qualified definition of the judicial capability of MRs. Marriage, in most cases, should be prohibited as well as the possession of weapons, a license to drive, and the exercise of dangerous professions. MRs should be provided better financial protection and receive a special and protected labor status so that they may enjoy all rights of other wage earners. Penal lawsuits should always start with a psychiatric examination so that a retarded accused may receive fair treatment. In general, the laws should be kept up-to-date according to the progress of medical and behavioral sciences. (No refs.) - *G. Van Massenhove.*

No address

1471 **ADAMS, MARGARET E.; & COLVIN, RALPH W.** The deprivation hypothesis: Its application to mentally retarded children and their needs. *Child Welfare,* 49(3):136-141, 164, 1969.

In light of the hypothesis that a culturally deprived environment can play a role in the etiology of MR, various means of intervention by social agencies have been utilized. Between 15 and 20 million children live in the detrimental environment of chronic and severe poverty, a subculture characterized by chaotic style of family life, families with 1 parent, overcrowded housing, apathetic and frequently mentally ill adult figures, and a general sense of alienation from the norms of society. A necessary sequel to early identification of the problem is prompt intervention. Day care and homemaker services, services to children in their own homes and to unmarried parents, foster care and family placement, and adoption are among the major types of intervention available. The participation of other agencies and disciplines in addition to social work is needed for the precise assessment of the level of functioning of a child. However, it is appropriate for a child welfare agency to serve as an advocate of these children by identifying the particular aspects of care required and by collating them from the various services. (18 refs.) - *B. J. Grylack.*

Walter E. Fernald State School
Waverley, Massachusetts 02178

1472 **LOURIE, NORMAN V.; & LOURIE, BETTY P.** A noncategorical approach to treatment programs for children and youth. *American Journal of Orthopsychiatry,* 40(4):684-693, 1970.

Functional institutional arrangements for child-help should replace institutions defined by categories based on legal, social, and diagnostic terms which often do not relate directly to the child. Present programs tend to deal with crises and events beginning after infancy, are geared more to professional needs, reach only a fraction of the population, and often do not relate to research findings. Terms need to be redefined, strategies to solve problems should be devised, and a workable definition of prevention is required. Concomitant with a redefinition of terms and a reordering of institutional organization is the need for greater investment in children in terms of budget and professional coordination which will emphasize foremost the needs of the child. (No refs.) - *M. S. Fish.*

Department of Public Welfare
Harrisburg, Pennsylvania 17120

1473 **JOHNSON, M. L.** Training centres for the mentally subnormal. *Nursing Mirror,* 130(25):31-33, 1969.

Training centers have provided considerable aid in helping the mentally subnormal who are incapable of being taught at school to learn to live independently in the community, to express themselves, and to gain some degree of social competence. In England and Wales in 1967, 284 junior and 250 adult training centers provided places for 15,981 children and 16,197 adults, respectively; and 128 centers for both children and adults had places for 5,119 and 4,689, respectively. A total of 18,545 children and 20,702 adults were attending the centers at that time. Junior centers stress self discipline, basic everyday achievements, and development and coordination of the senses. Centers are divided into rooms with gradually increasing standards of training as the child progresses. Development of competitive attitudes can often stimulate the lazy child. Buses deliver most of the children to the centers, which attempt to approximate regular school hours. Senior training centers (for 16-year-olds and older) may be divided into 3 units: a special care unit for Ss not trainable in other units; an occupational unit which provides a diversity of tasks to avoid boredom; and an adult

training unit in which much of the work approximates that of an ordinary factory. Emphasis in the latter 2 units is on preparation for possible employment in the community and on learning communication and social skills. Unfortunately, even when trainees become employable, placement is difficult because of the stigma and the tendency of the mentally subnormal to be noncommunicative. (No refs.) - *M. S. Fish.*

Aston Hall Hospital
Derby, England

1474 PODIETZ, LENORE. Monumental problems of MR care in Brazil. *Mental Retardation News,* 19(10):6, 8, 1970.

Problems of MR in developing countries are emphasized by data on MR in Brazil. Of a total population of 85,665,000 in 1967, 2,381 MR children had first admissions to institutions between 1963-1967; over the 3-year period from 1966-1968, 10,270 MR children were seen on a first consultation basis in clinics. The problem is complicated by underreporting – only 70-80% of the institutions report a census, and a higher incidence of MR is reported in more highly developed states, suggesting that underreporting and difficulty in establishing diagnoses in the more underdeveloped states is a frequent problem. Studies in Brazil center on the relationship of MR to malnutrition and on education of the large number of illiterates. Institutions oriented toward care of the MR include: a joint government-university operation comprised of a school and a clinic; institutions for cerebral palsied and physically disabled children; a combination school, workshop and clinic for trainable retarded children; a hospital with several multidisciplinary departments; a sheltered workshop for MR and for adolescents and adults with emotional and social problems; and a school which offers diagnostic, screening, consultation, and educational services. A major emphasis in these institutions is on psychomotor training in the education of the MR. (No refs.) - *M. S. Fish.*

Hahnemann Medical College and Hospital
Philadelphia, Pennsylvania

1475 SINGER, BENJAMIN D.; & OSBORN, RICHARD W. Social class and sex differences in admission patterns of the mentally retarded. *American Journal of Mental Deficiency,* 75(2):160-162, 1970.

Analysis of patients' records for the first 2,360 admissions at Children's Psychiatric Research Institute, Ontario, Canada, demonstrated higher male than female IQs and an increase – with age and social class – in differences between male and female IQ levels. Median IQ for males was higher in each age category, with male-female IQs varying positively with age. At the older ages, the different scores may reflect greater social concern with male accomplishments and greater tolerance of female deviation, since less is expected vocationally of women. The sex ratio of admissions is influenced by social class interacting with sex and age. If these conclusions are sound, social workers, educators, and others should be sensitized to the fact that individuals in certain social environments are missing necessary medical and psychological care. (3 refs.) - *B. Berman.*

University of Western Ontario
London, Ontario, Canada

1476 DOYLE, FATHER DAVID A. Teaching religion to the trainable child. *Parent Educator,* 3(4):4A-7A, 1969.

Teaching religion to the TMR child must be done in a way that facilitates learning. Start with a picture of Christ Our Light, then get the children to do favors for one another, thus fostering a religious spirit. Do not try to generate intellectual assent; rather, dispose them to bring the Spirit to their hearts and minds. Teaching religion to the retarded child should be the same as with normals, except that ideas must be scaled down to their levels. Since their perception of things is different, pictures must not be complicated. Teach them to do things, to understand charity by deeds. The main content of the curriculum should teach that we are friends of one another in our friend Christ; the most vital scenes in Christ's life should be presented in a prayerful and entertaining manner. With phrases from the Bible, prepare a catechism course to guide the child to an understanding of charity. (No refs.) - *B. Berman.*

No address

1477 BIRENBAUM, ARNOLD. Helping mothers of mentally retarded children use specialized facilities. *Family Coordinator: The*

Journal of Education, Counseling, and Services, 18(4):379-385, 1969.

Interviews with 103 mothers, most of whom had moderately retarded children living at home, reflected the helpfulness of maternal participation in organized MR activities in accepting objective and scientific explanations of retardation. Particular help was derived from attendance at child-development clinics and voluntary associations, particularly the Association for the Help of Retarded Children, where mothers acquired knowledge of MR and how it affected them and learned how to reaffirm their normalcy and membership in the conventional social order. (4 refs.) - *B. Berman.*

City University of New York
New York, New York

1478 **GOLDBLATT, DOROTHY S.** Foster family care for the mentally retarded child. *Child Welfare*, 48(7):423-426, 1969.

Problems in placing a 6-year-old, brain-damaged, battered child in a foster home illustrate the possibility of developing special homes for exceptional children. Placing the child required evaluating prospective foster parents, cooperation of many individuals and agencies, and careful transition from hospital to foster home. The foster mother, with initial supportive case work, worked with the school-system's special-education program and the local parent group for retarded children in handling inevitable behavior and discipline problems. Agency flexibility, imagination, careful planning, and consistent case work will accomplish the "impossible" in placing retarded children. (No refs.) - *B. Berman.*

Rhode Island Child Welfare Service
Providence, Rhode Island

1479 **ADAMS, MARGARET E.** Foster care for mentally retarded children: How does child welfare meet this challenge? *Child Welfare*, 49(5):260-269, 1970.

The idea of foster care for MR children—oriented to a positive, insightful approach—is replacing traditional institutionalization in social-work practice. A 7-city study by the Child Welfare League of America has justified the trend as fulfilling MRs' needs. Foster care, in this study, included any type of residential care furnished by a formally authorized agency (a large-scale congregate care facility, a group home, a residential treatment center, or a foster family). A good foster family provided the most intimate surroundings and maximal personal interaction, with the greatest potential for nurture and stimulation. Retarded children need foster care because of psychological harm derived from, or contributed to, their families. Retardation, so often a byproduct of adverse sociocultural experiences, may, in some cases, be reversed by effective intervention in a foster home. Innovative ideas and practices revealed in this study many interagency services through which multidisciplinary activities provide a continuum of care for the retarded—particularly the close, intensive care needed in early developmental years. Administrative problems must be mastered in foster care and "stopgap" placements—pending an institutional vacancy—that can seriously damage the mildly retarded child by the double adjustments required must be avoided. (16 refs) - *B. Berman.*

Walter E. Fernald State School
Waverley, Massachusetts 02178

1480 **PERSKE, ROBERT.** Ministry and mental retardation. *Pastoral Psychology*, 20(1):21-27, 1969.

A clergyman involving himself, pastorally, with a child who is MR and his family finds new understanding about his own beliefs in God and His creations. He finds that often parents of children with MR go through a theological crisis, during which—in their struggle to reconcile what they believe about God with what has happened to their child—they either join, leave, or change churches. Some parents struggle for years before accepting the reality, and some things in them must, in a sense, die before they are "re-born." The persistent parental cry of anguish leads to a new view of the problem of evil, suggesting that the world, we, and those with MR are all unfinished and we are all sharing in God's work of creation. Those with retardation show us that we are all a conglomerate of strengths and weaknesses struggling for improvement. And the creative struggles of the parents are seen in such accomplishments as: a growing number of special-education classes; education of legislators, government agencies, local institutions, and the community in the needs of retardates; and expansion of

day-care centers and sheltered workshops. (5 refs.) - *B. Berman.*

Menninger Foundation
Topeka Kansas 66601

1481 BOYLE, JOHN. A learning experience in helping parents get what they want. *Children*, 17(4):126-132, 1970.

A social worker's chronology of efforts to benefit MR children in the underprivileged Desire area of New Orleans recounts a successful 7-month parent-community campaign to develop and fund a new school for hard to place MR children. With nearly 5,000 MRs in the New Orleans area not receiving any special care, the need for such an institution was particularly acute. The group's organizing efforts culminated in the opening of the Desire Community School for Exceptional Children in September 1969. The school, funded jointly by the U.S. Dept. of Health, Education and Welfare, the Community Center, and the Association for Crippled Children (New York City), expanded from an original enrollment of 6 students to 25 by May 1970. (No refs.) - *N. Mize.*

No address

1482 FREDERICKS, H. D. BUD; BALDWIN, VICTOR L; McGEE, JERRY; & McALLISTER, JAMES. Oregon evaluates its Title VI program. *Exceptional Children*, 39(9):689-692, 1970.

Prior to awarding contracts for the conduct of programs under Title VI of the Elementary and Secondary Education Act of 1965, P.L. 98-750, as amended, the state of Oregon decided to evaluate its 20 programs for educating the handicapped (7 for EMRs, 4 for TMRs, 5 for speech-impaired, 2 for deaf, 2 for emotionally disturbed). The evaluation was conducted by the Exceptional Child Research Program, Teaching Research Division, Oregon State System of Higher Education, under contract with the Oregon State Department of Education, along guidelines provided in 1968 by Stufflebeam for assessing Title VI programs. Context, input, process, and product were evaluated. Of the 20 programs, 9 were considered fully successful; 6, partially successful; 5, unsuccessful. The evaluation program itself was deemed a success and has been repeated, with additional funds supplied for site visiting by evaluators. (5 refs.) - *M-E. Sayre.*

Oregon State System of Higher Education,
Eugene, Oregon

1483 RICHARDS, HYRUM E.; & FOWLER, ROBERT M. Helping the learning disabled through existing community services. *Journal of Learning Disabilities*, 3(11):563-569, 1970.

The cooperative application of existing facilities can be helpful in the diagnosis and alleviation of learning problems among children; an example of the successful development of such a program is provided. Originally, the community provided facilities for retarded and disturbed children, but not for the definitive diagnosis and education of those with learning disabilities. A coordinated team approach was instituted among teachers, parents, nurse, social worker, psychometrician, psychologist, speech therapist, and physician. Observations were made for hyperactivity or hypoactivity, perceptual-motor and conceptual problems, WISC patterns, and medical history. Of 113 referees, 50 were failing school subjects despite IQs of at least 90; all 50 showed abnormal behavioral, perceptual-motor and/or other test patterns. Chemotherapy was helpful in 22/40 cases; parental counseling and teacher consultations were useful; 8 children were helped by special tutoring. (16 refs.) - *E. Kravitz.*

McKinley School
Casper, Wyoming 82601

1484 Education for handicapped children. *Nursing Mirror*, 131(7):5-6, 1970.

An estimated 200 young children in Great Britain have serious impairment of both sight and hearing, and many of them have other mental or physical handicaps as well. The Secretary of State for Education and Science has drawn the attention of local education authorities to the importance of early comprehensive evaluation of such children and to the need for assessing the adequacy of existing educational provisions for them. Unless there are sufficient numbers in any one locality, it would not be feasible to set up an establishment catering especially to these children, but in a densely populated area it may be possible to

establish a special nursery or infant class. Day care may continue to be suitable for some of the older children, particularly if provided in association with an existing special school, but others may require residential facilities. Those suffering from mental handicaps may need to be placed in residential care programs for the retarded. (No refs.) - *J. C. Moody.*

1485 **COWIN, RUTH.** Some new dimensions of social work practice in a health setting. *American Journal of Public Health,* 60(5):860-869, 1970.

Proliferation of social problems and the limitations of inadequate social services compel changes in philosophy and in the organization and delivery of services. Major differences between traditional and modern social work methods include the current aggressive reach-out approach, persistence in sticking with a family until at least minimal goals are achieved, the emphasis on the needs of the family as a whole with consequent coordination of services, and the effective use of less than fully trained staff. The consultant role of the social work generalist is exemplified at the Martha Eliot Family Health Center near Boston which, in providing a wide spectrum of social work and health care services, encourages social work referrals when problems are just incipient and when early detection may offer the best opportunity for the effective utilization of services. Certain types of cases in which social work intervention usually seems indicated are routinely referred for consultation. Among these are battered children, children in need of care and protection, and children who are mentally retarded or have other handicapping conditions. (9 refs.) - *J. C. Moody.*

Martha M. Eliot Family Health Center
Jamaica Plain, Massachusetts 02130

1486 **FOX, SHEILA.** Sympathy or brass tacks. *Mental Health,* (Spring):40-42, 1970.

A social worker must deal with family problems engendered by the presence of a spastic child. Feeding, toileting, sleep, transportation to physiotherapy and other aspects of care may all pose difficulties. One of the chief problems is the need for relief for the mother from the day-in-day-out routine. The attitude and conscientiousness of local authorities have a considerable bearing on whether this relief will be forthcoming. The need for centers with day-care provisions, either attached to junior training centers or in MR hospitals, is great. In addition, every local authority should have social workers skilled and trained in providing support to handicapped children and adults and their families. (No refs.) - *M-E. Sayre.*

No address

PROGRAMMATIC ASPECTS - Residential

1487 **O'BRIEN, JOHN.** A sixth former meets the 'subnormal.' *Teaching and Training,* 8(3):90-93, 1970.

Contact with MRs should be a requirement in the education of all 'normals,' for one finds them qualitatively no different and additionally they teach one flexibility by learning to adjust to varying levels of understanding. It is selfish, undemocratic, and uncharitable to brush aside the MR as 'different.' In a training center, one finds them outwardly happy, contented, and friendly, with a gamut of personal emotions. Most surprising to the uninitiated is their faculty for creative work, an understanding of esthetics, and an ability (in painting) to express their feelings and surroundings. One must learn to communicate with them at their different mental levels; once that is done, one will find that they are 'people.' (No refs.) - *B. Berman.*

Havering Adult Training Centre
Essex, England

1488 'The bottom of the barrel.' *Teaching and Training,* 8(2):56-59, 1970.

Of 12 SMR, antisocial hospitalized, adult patients participating in a 4-year experiment at resocialization, 4 failed to respond, 4 others could not

readily be evaluated, and the 4 remaining were successfully integrated into normal participating members of the hospital. All Ss, who had been in closed wards for periods up to 20 years because of destructive behavior, initially were taken from the ward for 1 hour a day. Most, at first, displayed great violence and emotional upheaval. Gradually the approach became a strong appeal to the emotions through music, rhythm, color, movement, and touch. Initial learning was from observations of one another, then gradual introduction of primary-school activities, followed by sheltered occupational therapy. The 4 successful Ss attained a full-time occupation, learning a variety of tasks. Teaching the unstable 'low-grade' retardate can prove a rewarding experience. (1 ref.) - *B. Berman.*

1489 MILLS, JOAN. The role of the parent in a state residential facility for the retarded. *Welfare Reporter,* 21(3):31-36, 1970.

At New Jersey's Woodbridge State School for men and women, the parent's role is one of total involvement with the school's activities. A Parents' Association—a representative body with a governing Cottage Council—prints and mails, without charge, a school newspaper, supports employee service clubs, provides gifts for staff, holds various events to raise funds, and makes generous money contributions to make life more interesting and enjoyable for all members of the school. Parent-teacher relations are excellent, with parents "pinch hitting" for staff in emergencies. (No refs.) - *B. Berman.*

Woodbridge State School
Woodbridge, New Jersey 07095

1490 GELMAN, SHELDON R. An experience in social and community living for the acting-out retardate. *Deficience Mentale/Mental Retardation,* 20(2):13-16, 1970.

The goal of a Readjustment Unit in a state institution is to provide intensive treatment in a controlled environment aimed at altering the unacceptable and irresponsible behavior of acting-out MRs. Clients range in age from 15 to 22 years and have an IQ range of 65 to 85 on Wechsler Intelligence tests. Behavioral characteristics of the Unit population include: handling peer and staff problems by acting out physically; continually blaming others for personal difficulties; responding defiantly to authority figures; negative and hostile response to program activities, instruction, and constructive criticism; open rejection of staff help; difficulty accepting behavioral limits; and use of detrimental manipulative behavior. In the Readjustment Unit, an individual approach based on prevention rather than punishment is used. Small group situations provide structured social interaction and confrontation. In the first phase of the program, emphasis is on structured activities, prevention, emotional control, responsible behavior, success experiences, and communication skills. Phase II occurs in a "family living unit" and is aimed at preparing clients for return to the community. This phase emphasizes meaningful social interaction, self-help skills, homemaking, vocational attitudes, community experiences, and employment experience. (No refs.) - *J. K. Wyatt.*

Laurelton State School and Hospital
Laurelton, Pennsylvania 17835

1491 ALLEN, RICHARD C. Legal rights of the institutionalized retardate: Equal justice for the unequal. *Mental Retardation,* 7(6):2-5, 1969.

"Inability to manage one's self or one's affairs" is the determining factor required for institutionalization proceedings for both children and adults in 25 states. Although there is a growing trend which favors home care of very young MRs, many obstetricians still urge the institutionalization of children under age 6, especially in the case of a mongoloid child or when there are other children in the home. In states where judicial approval for institutional placement is required, commitment petitions are invariably approved. Diagnostic facilities and institutional and community resources are seriously deficient. Many institutions do not provide a comprehensive staff review when a resident reaches the age of 21, and no followups are made after that time. There is no review of internal decision making by external authorities in most programs. When an MR enters a public institution he becomes a resident, and treatment with regard to jural rights is based on institutional judgements and staff practices, rather than on legal requirements. Routine income is generally received, held, and managed by the institution with or without statutory authority. Trust funds are co-mingled, although in most institutions, MRs retain some portion of the money for their own use. Almost half the states permit involuntary sterilization, and in states where voluntary sterilization is the rule, the actual voluntariness of consent

is often questionable. MRs should have all the rights of citizenship that they are capable of exercising. (9 refs.) - *J. K. Wyatt.*

George Washington University
Washington, D. C.

1492 **JACOBY, GEORGE W.; & BONHAM, ROGER D.** How a basic data collection system stimulates personnel and programs. *Mental Retardation*, 7(6):47-50, 1969.

A simple, low-cost patient data collection and analysis system at Ohio's Apple Creek State Hospital provides factual knowledge; forces professional staff members to provide accurate information for diagnosis and rehabilitation procedures; motivates wholesome, constructive interdepartmental rivalry; and provides concrete statistics which foster realistic, valuable, and lasting relationships with the community. The system provides factual, nonjudgemental data in general areas, as well as in the specific social, medical, and psychological fields. After 7 years of use, the system has been responsible for increased motivation, constructive involvement of hospital personnel, and improved community relationships. A sample data sheet is included. (No refs.) - *J. K. Wyatt.*

No address

1493 **WOLFENSBERGER, WOLF.** Twenty predictions about the future of residential services in mental retardation. *Mental Retardation*, 7(6):51-54, 1969.

Future residential services for the MR will be based on a new model of "residential services," as opposed to the traditional institutional model. Institutional practices will begin to emphasize developmental capacity, and the concept of management will replace the treatment model. The normalization principle will assume great importance and influence. Many small, specialized dispersed, community-integrated residential centers will be established for 6 to 20 persons. Other administrative structures will provide services now considered part of residential services. There will be trends toward increased numbers of live-in houseparents and increased local participation in the funding of local services. Residential units will be modeled on specific disciplinary modes and administered by individuals within those disciplines. Traditional institutions will eventually disappear. The need for residential placement for individuals below age 40 will decrease, while this same need will increase for MRs older than 40. Short-term residential placements will increase and long-term placements will decrease. (16 refs.) - *J. K. Wyatt.*

Nebraska Psychiatric Institute
Omaha, Nebraska

1494 **LUDTKE, ROLAND H.; & ELLIOTT, ALBERTA.** The changing role of volunteers in a residential facility for the mentally retarded. *Mental Retardation*, 7(6):13-16, 1969.

Volunteers are trained to implement treatment and training programs in a state institution while professional staff members serve as trainers and consultants. The training program involves workshops in speech therapy, programed instruction, orientation in MR, working with atypical children, and basic psychological testing. Among the program areas where volunteers serve as aides or instructors are social work, teaching, psychological testing, operant conditioning, arts and crafts, music therapy, remotivation, physical and speech therapy, and sheltered workshops. In addition, they participate in the training of blind and deaf MRs and conduct classes in grooming and physical education. During the last fiscal year, 203 volunteers contributed 9,874 hours to work in 17 programs. The project requires effective recruitment procedures to obtain qualified volunteers, effective volunteer screening, carefully planned training programs, continuous training, effective volunteer-staff communication, and consistent followup and coordination. (No refs.) - *J. K. Wyatt.*

Austin State School
Austin, Texas

1495 Faut-il melanger psychotiques et debiles (Should psychotic and mentally retarded children be mixed?). *Nos Enfants Inadaptes*, 33(1):11-14, 1970. (Interview with Dr. Mises)

A service which admits both psychotic and MR children has arranged for both to live together in groups of 12; psychotics with their behavior and

anxiety problems are well tolerated by the group. Such a mixture must never be a pretext for reductions of personnel or equipment. Likewise, one must realize that some classifications are rather artificial and that all kinds of intermediate types exist. In a similar vein, psychotherapy, re-education, and psychology cannot be separated. Problems of institutional and individual psychotherapy are discussed; the difficulties of applying the latter form in institutions are stressed. Finally, there is a need for the director of an institution or for the supervisor of a group to take an interest in family problems and for closer relations between physician, educator, nurse, psychotherapist, and the parents. (No refs.) - *K. Baer.*

1496 **BAYES, KENNETH; & FRANCKLIN, SANDRA.** Design approach to an individual building. In: Bayes, K.; & Francklin, S., eds. *Designing for the Handicapped.* London, England, George Godwin, 1971, p. 11-17.

A new approach to the handicapped requires a new approach to the design of a coordinated service for the handicapped. The fact that few people have been able to fully respect the role of the designed environment in the successful functioning of any activity until recently is fundamental to the problem. Descriptions of the function of a project, types of handicapped children admitted, background and future of children admitted, group categorization of the children, activities of the children, staff, parents, and local community, and interrelationships of activities should be included in the outline of a functional program. The design plan should be derived directly from the functional program. Contact with and participation by the community in the program are encouraged by physical proximity and initiation of dialogue. The physical design should provide space for skills at various age levels, space for communal activities, and space for different types of behavior. Architectural forms and a variety of visual and tactile experiences are aids to education and therapy. (No refs.) - *B. J. Grylack.*

1497 **HELSEL, ELSIE D.** Residential services. In: Wortis, Joseph, ed. *Mental Retardation: An Annual Review. III.* New York, New York, Grune and Stratton, 1971, Chapter 6, p. 76-102.

New concepts and practices indicate promise of a change in residential services for the MR away from the dehumanizing aspects of the past. New terminology (use of residential services and facilities instead of institutional and custodial care) implies new concepts which include approaches toward new programs, development of standards and procedures for accreditation, and drafting of policy guidelines. Large public institutions still care for most MR individuals – about 200,000 MR, still only 3% of the estimated retarded population, are in such institutions. Any improvement in the services of these institutions first requires a definition of their role; however, considerable opinion presses for their replacement by smaller regional centers. The history of public institutions for the MR is replete with instances of dehumanizing practices, many of which are still in use. A recent evaluation study by the American Association on Mental Deficiency has reported findings showing a high degree of overcrowding, inadequate staffing, substandard facilities, and lack of protection of workers from policies of forced labor. A planning grant has enabled the formulation of an accreditation policy which should help to alleviate these problems. Policy statements have been drafted to delineate the objectives of residential facilities. These also point toward elimination of dehumanizing elements and provision of an environment in which the MR can experience social and intellectual development and learn useful skills and habits. Hospital improvement projects include studies on the use of operant learning and behavior shaping and up-grading skills of staff; changes in building codes will permit the construction of safer, more flexible facilities. Alternatives to the large public institutions include regional centers, group homes, homes operated by private corporations, and foster homes. These approaches offer the possibility of more flexibility and community integration than can be realized with the large, multipurpose institutions. Pitfalls include lack of protective services, underutilization, community resistance to the small group homes, and uncertainty of financial support. Areas requiring additional research are: further examination of accreditation standards; behavioral research; manpower training, deployment, and utilization; data collection and dissemination; cost-benefit studies; payment for care and guardianship; and investigation of alternatives. (73 refs.) - *M. S. Fish.*

1498 **DONOGHUE, E. C.; ABBAS, K. A.; & GAL, E.** The medical assessment of mentally retarded children in hospital. *British Journal of Psychiatry*, 117(540):531-532, 1970.

Of 285 hospitalized MR children (55%, 4 yrs old or younger; 35%, 4-10 yrs; 8%, 10-13 yrs; almost all SMR; many with cerebral palsy, epilepsy, and ophthalmic lesions), only one-tenth needed continuous medical investigation or active treatment. The Ss were for the most part small (49% below the tenth percentile) and of low weight. Forty-three percent had IQs less than 20, and 49% had IQs 20-51. Ten percent showed 2 or more of Kushlick's criteria of emotional disturbance (overactive, destructive, aggressive, attention seeking, and self-mutilating). (8 refs.) - *B. Berman.*

Queen Mary's Hospital for Children
Carshalton, Surrey, England

1499 Royal Medico-Psychological Association memorandum on future patterns of care for the mentally subnormal. *British Journal of Psychiatry*, 117(540):581-582, 1970.

The Royal Medico-Psychological Association has developed 12 guidelines for the care of those with MR. These guidelines, which the Health Department is urged to adopt, include: consultation with practicing clinicians before formulating policy; coordination of statutory and voluntary services; a team approach utilizing many different disciplines; full outpatient and inpatient assessment of every suspected case; establishment of community hostels providing accommodations for hospital discharges; integrated area service providing day care for patients who do not need residential care or are unsuitable for junior and adult training centers; small, single-story, homelike units within the hospital, functioning as a village; a hospital bed-ratio of 1.8 or 2.00/1,000; hospital research into causes, treatment, and training; one full-time consultant psychiatrist with a supporting team for a population of 200,000; an increase in the senior registrar establishment in MR hospitals; and urgent study of nurse morale and utilization. (No refs.) - *B. Berman.*

1500 Improving mental subnormality hospitals. *Lancet*, 2(7687):1371, 1970.

Improvements in 3 mental-subnormality hospitals in East Birmingham, England, have centered on: (1) operating the 3 hospitals as one division, with a professional executive directing a team (much greater staff participation has resulted); (2) reducing overcrowding and providing more flexible accommodations; (3) renovating and re-equipping the worst wards; and (4) elevating the professional status of nurses as trainers and social educators. (1 ref.) - *B. Berman.*

1501 **HUGELMEYER, ROBERT E.** Adult training at Woodbridge State School. *Welfare Reporter*, 20(4):19-22, 1969.

The Adult Training Department at New Jersey's Woodbridge State School, a residential facility for 1,000 severe and profound retardates with a work force of 800, provides job-related experiences and training designed to qualify all employees to give proper care and training to the residents. This in-service program of long-term and short-term training and orientation courses, using Federal and state funds, offers orientation for new employees (weekly 1-day surveys of the institution's layout and structure and introduction to their duties), supervisory training (providing opportunities for improving employee skills, morale, and job satisfaction), health-occupation training (classroom and on-the-job instruction in nursing skills and procedures), and a high-school equivalency program. In addition, time is devoted to developing mutually beneficial relations with parents of residents, and training is offered retardates living in the community to qualify as institutional attendants or building-service workers, under state civil service, to work in the school. (No refs.) - *B. Berman.*

Woodbridge State School
Woodbridge, New Jersey 07095

1502 **WOOD, TOM.** Outdoor education program is emphasized at Dixon. *IRCH Newsletter*, 4(2):2-4, 1969.

An outdoor-education program for 1,400 institutionalized MRs at Dixon State School, Dixon, Illinois, (carried out in the summer of 1969) not only mitigated the bleakness of confinement, but provided skills and knowledge (such as cooking, hygiene, and personal care) of practical use in community placement of school residents. An

old farmhouse, barn, and several fields provided facilities for garden cultivation, each garden being designed for particular degrees of handicap, with more capable students growing a wide variety of vegetables. Cookouts provided fun in eating the vegetables and opportunity to teach cooking skills. Visits to a 4-H farm permitted students to become acquainted with farm animals. A special "buddies-for-blind children" program enabled blind MRs to enjoy personal care and work with area volunteers in planting crops, touring farms, and doing arts and crafts. Day and overnight camping provided the severely and profoundly retarded with new recreational and therapeutic experiences. Each participant was carefully chosen and permitted participation correlated with his capability and probable benefits to be derived from the program. (No refs.) - *B. Berman.*

Southern Illinois University
Carbondale, Illinois 62901

1503 **SIMMS, MARY M.; & BROWN, JOHN A.** Infants in institutions: A reappraisal. *Catholic Charities Review,* 54(3):13-23, 1970.

A study of 36 infants selected from two child care institutions and matching pairs of 36 infants having approximately the same length of time in foster homes was designed to test the long popular notion that infants reared in foster homes have a better environment and are less subject to late retardation than institutionalized infants. Measurement of later adjustment on the Cattell Infant Intelligence Scale, the Vineland Social Maturity Scale, and the Infant Maturity Scale developed at the University of Toronto's Institute of Child Study support the earlier findings of Rheingold in suggesting that there is no significant difference between the adjustment of infants who receive pre-adoptive care in a foster home and those placed in an institution for the first 8 weeks of life, in any of the three areas tested. It is also concluded that an institution can adequately meet the needs of an infant for the first 3 months of life, but that if the child remains in an institution beyond this time, denied a focussed relationship with a single mothering person, his social and psychological development will be adversely affected. (25 refs.) - *N. Mize.*

St. Vincent-Sarah Fisher Home
Farmington, Michigan

1504 News from Westminster: Staff heroism in mental hospitals praised. *Nursing Mirror,* 130(8):11-12, 1970.

The government will be devoting more resources to improving physical conditions for the mentally ill and MR. More local hostels where many handicapped persons could live closer to their communities are being provided. Matters discussed included the transition from a purely custodial function to a therapeutic and curative one, even within outmoded buildings. An appeal was made for a shift from the term "mental subnormality" to "mental handicap," a term which connotes more dignity and humanness. The lack of privacy in institutions was deplored, as well as the lack of affection, good food, and good relationships. Examination of costs per bed indicates that the MR were discriminated against in regard to facilities and care. The current expanded budget calls for no discrimination between the mentally ill and the MR. Although the nurse:patient ratio has improved, overcrowding remains a problem in many locations. Community services of local authorities for MR children have increased greatly, and provisions have been made for many such children to live at home with their families. Thirty percent of hospitalized MRs should have community placement. To prevent increases in the number of children surviving with mental or physical handicaps, rubella vaccines and prenatal treatment are necessary. In 10 months, more progress has been made in the area of care for the mentally handicapped than in the previous 20 years. (No refs.) - *M-E. Sayre.*

1505 Subnormality services. *Nursing Mirror,* 130(8):8, 1970.

Although new accommodations have been built in North East Metropolitan Region (England) for an additional 800 MR patients, there is still overcrowding amounting to about 700. Hence, it has been necessary to impose a ban on new admissions. More than 300 patients now hospitalized should be cared for in local authority hostel accommodations. Provisions for these patients will be inadequate over the next 4 years; currently, there are about 400 patients who are in need of hospital care but could not be accommodated. (No refs.) - *M-E. Sayre.*

1506 **MacCARTHY, J. S.** Starvation by vomiting in a severely subnormal patient. *Nursing Mirror,* 130(9):38-39, 1970.

A 24-year-old hyperactive microcephalic, SMR male, who had been institutionalized since 10 years of age, became progressively more antisocial and, before admission to a security hospital, was involved in 15 incidents of violence to patients and staff and destruction of property. Soon after admission, he began the habit of gluttonous feeding, followed by massive air-swallowing which resulted promptly in the vomiting of the meal; afterward, he would attempt to eat the vomit and was distressed when restrained. Numerous feeding techniques were attempted, but he failed to improve and his weight declined. For no apparent reason, the patient's condition improved and the vomiting decreased; he improved sufficiently to be transferred to an "open" hospital. Apparently, much of the earlier aggression stemmed from starvation caused, in turn, by the vomiting. (No refs.) - *M-E. Sayre.*

Moss Side Hospital
Liverpool, England

1507 School for spina bifida sufferers. *Nursing Mirror,* 130(11):11, 1970.

The Mosbrook School (Sheffield, England), second school of its type in the country, was opened in March 1970. It is designed to accommodate 60 children suffering from spina bifida. It is equipped with special bedrooms, a hydrotherapy pool, an open-plan teaching area, and a self-contained nursery. Since it is located near Sheffield Children's Hospital where the techniques of surgery and care for spina bifida children were developed, children from the school have ready access to daily treatments. (No refs.) - *M-E. Sayre.*

1508 ANDREWS, JOHN. Impoverished and ignored: Report and comment...on the annual conference of the National Association for Mental Health. *Nursing Mirror,* 130(10):19-21, 1970.

The speakers at this annual conference covered a wide variety of topics. Institutional housing (overcrowding and an unhomelike approach) of mentally ill and MR patients was seen as a chief problem. The use of cheap prefabricated buildings with pleasant interiors was advocated so that replacements could be afforded when needs changed. If changes could be brought about in care of the MR, many of them could be returned to the community, as has occurred among the mentally ill. In some hospitals, much has been accomplished to alleviate overcrowding and its psychological damage and to improve treatment, through such methods as grading wards according to nursing dependency, intensive work in behavior training with selected groups, actual reduction of bed numbers, and splitting of wards into smaller units. Another major area considered was that of more adequate training for personnel dealing with the MR and mentally ill, by revising preparatory courses and through continuing education. (No refs.) - *M-E. Sayre.*

No address

1509 McKEOWN, THOMAS; & TERUEL, J. R. An assessment of the feasibility of discharge of patients in hospitals for the subnormal. *British Journal of Preventive and Social Medicine,* 24(2):116-119, 1970.

In keeping with the widely accepted philosophy that MRs not requiring hospital care should live in their own homes or, if that is not feasible, in hostels, the possibility of discharge of such patients has been explored. Ss were 204 children under 16 years of age in Birmingham (England) hospitals for the MR and a random sample of 339 of those above that age. About one-third of the patients did not require hospital care and about one-fifth were deemed suitable for discharge to their own homes (in a few cases) or to hostels. Improved medical, educational, and welfare services would likely increase the number of patients who could live outside the hospital. (1 ref.) - *M-E. Sayre.*

University of Birmingham
Birmingham, England

PROGRAMMATIC ASPECTS – Recreational

1510 **ROBERTSON, JEAN.** An adventure playground in London. *Special Education,* 59(2):18-19, 1970.

At Chelsea and Surrey, England, playgrounds have been established which provide opportunities for all kinds of play for the physically handicapped, the partially sighted, and the educationally and severely mentally retarded. In groups of 30, accompanied by teachers and therapists, 400 children have been coming weekly to Chelsea's St. Luke's rectory from the nearby Center for Spastic Children. The adventure playground at Queen Mary's Hospital, Surrey, was one of the first to be introduced into an MR hospital. Some of the children, originally very clumsy, have acquired greater skill and self-confidence in moving about, illustrating the frequent observation that motor abilities of retardates may be more advanced than their other attainments. (No refs.) - *B. Berman.*

Guy's Hospital
London, England

1511 **O'MORROW, GERALD S.** Recreation counseling: A challenge to rehabilitation. *Rehabilitation Literature,* 31(8):226-233, 1970.

Good counseling is the keystone of an effective rehabilitation program. In an investigation of recreation services to psychiatric patients in relation to predischarge planning and aftercare, 415 to 645 public and private institutions responded. Of the 290 which provided an operational recreation service, 150 had recreational counseling. Counseling services were predominantly offered by the larger institutions. Those institutions that reported full counseling services indicated 100% participation and extensive use of community resources. Patients were selected for counseling when the rehabilitation staff felt it would be of benefit. Individual and group counseling were used, and a variety of recreation topics covering many areas were discussed. The patient was involved in a variety of community activities prior to discharge. Very few institutions provided the patient with a directory of community recreation resources at discharge. Successful recreation counseling is dependent on the time and effort invested by the rehabilitation staff to help the individuals develop a realistic leisure time plan. This requires the exploration of leisure needs, past experience, and knowledge; the investigation of attitudes toward leisure; the assessment of potential abilities; and the procurement of information regarding available leisure agencies in the community. (29 refs.) - *J. K. Wyatt.*

Indiana State University
Terre Haute, Indiana 47809

1512 Sports and mentally handicapped in Malta. *Qawwi Qalbek,* II:27, 1970.

In Malta, much needs to be done to provide sporting activities for MR children and their families. MR children have had recent opportunities for swimming and bowling. Other Sports Associations have invited the children to participate in football, table tennis, and billiards. There is a need for government-provided playing fields as well as for specially-equipped playing fields. (No refs.) - *J. K. Wyatt.*

1513 "Hobbys" pour handicapes mentaux (Hobbies for the mentally handicapped). *Deficience Mentale/Mental Retardation,* 20(1):48, 1970.

"Hobby" is defined as an organized personal activity continued over considerable periods of time and lacking any profit motive. Consequently, when parents of MR children assume that watching television is a hobby, they are mistaken, inasmuch as there is no personal activity involved. Two case histories involving stamp-collecting and the recording of sounds on tape are briefly presented as examples of hobbies

suitable for the MR. It follows that the MR: is able to practice a hobby; can spend much of his time on it and should be encouraged to do so; and should be given the necessary space, time, and material. A hobby will help the MR develop his intellectual, physical, or sensory capabilities. (No refs.) - *K. Baer.*

1514 **WOOD, TOM.** Cooperation is the key word in Milwaukee. *IRCH Newsletter,* 4(2):3, 1969.

Milwaukee has led the way in providing parks and free public recreational facilities for the handicapped. An all-purpose center in Haller Park (turned over to the local Society for Crippled Children) provides programs for about 260 persons every summer. Day-camp experiences, a wide variety of activities, and new programing methods are designed to overcome the handicapped child's (and the parents') fear or reluctance to participate. The community's cooperation and the willingness of outsiders to participate have contributed to the program's success (high-school and college students have been especially helpful). The relaxed nature of the day camp and its friction-free atmosphere are further elements in its success. (No refs.) - *B. Berman.*

Southern Illinois University
Carbondale, Illinois 62901

1515 **PUMPHREY, MURIEL W.; GOODMAN, MORTIMER B.; KIDD, JOHN W.; & PETERS, EDWARD N.** Participation of retarded children in regular recreational activities at a community center. *Exceptional Children,* 36(6):453-458, 1970.

Forty-one EMR children who participated over a 5-year period in leisure-time activities at a community center showed that, although they displayed differences from normal controls, the differences were manageable and diminished considerably with continued exposure to normal children. A follow-up study showed three-fourths had performed at least minimally well. Most of the children came from white middle to upper-middle backgrounds; 30 had 1 or more physical handicaps (speech, coordination, tics, epilepsy, and spasticity). Differences from normals included less participation and contribution to group activity, a need for more support from leaders, and more easily frightened and upset. EMRs needed more time to adjust to new situations and to respond to common cues. The range of activities in which they participated was broad: physical education, camping, clubs, gameroom, cooking, sewing, dancing, dramatics, etc. Initial behavior included inappropriate responses, shyness, and withdrawal; 15 were unexceptional. Two raters—at the end of the period—rated 15 Ss as "good," 16 as "satisfactory" and 10 as "poor." Overall performance suggests parents and teachers can safely encourage EMRs to explore the "normal" world during leisure time. (8 refs.) - *B. Berman.*

Washington University
St. Louis, Missouri 63130

1516 **GORTON, JOHN.** Playing it cool. *Challenge,* 5(2):4-5, 1969.

An unplanned, 12-week ice-skating program provided new, challenging experiences which improved coordination, poise, strength, and self-confidence for 55 residents (low-trainable to educable MRs, 10-50 years of age) of the Ladd School in Exeter, Rhode Island. Some skated well without help; others improved through instruction and practice. A lack of sufficient instructors required improvisations; hockey sticks helped in providing support and balance. (No refs.) - *B. Berman.*

Joseph H. Ladd School
Exeter, Rhode Island 02822

1517 **HODGES, ALTON.** Therapeutic gymnastics for the mentally retarded. *Challenge,* 5(2):6-8, 1969.

Emphasis on physical fitness, motor proficiency, and recreational development for MRs has led to therapeutic gymnastics, which concentrates on training in perceptual-motor activities in which children, with as much independence as they can achieve, learn balance, gross motor or total-body coordination, visual-motor coordination, manual dexterity, and agility. At Austin State School (Texas), 250 children with marked perceptual-motor weaknesses have benefitted from such a program. SMRs benefit by scooting, dragging, sliding, crawling, rolling, or allied activities.

Parallel bars and the trampoline help in providing progressive changes in the child's movement environment. Since the range of neuromotor performance is varied, the program follows no standard sequence. Goals include the development of motor abilities in situations demanding thinking, planning, and coordination of movement. (No refs.) - *B. Berman.*

University of Texas
Austin, Texas 78712

1518 **WILLIAMSON, BOB.** New uses for milk cartons. *Challenge*, 5(1):10-11, 1969.

Simple milk cartons can provide challenging games for retardates. Milk-carton soccer, played with 6 to 20 players, is designed to use teamwork in taking a carton from opponents and scoring a goal and develops eye-foot coordination. Two variants of the game employ different numbers of players and varying rules for direction of movement. An obstacle course game places cartons about 4-5 feet apart in a line, circle, or other formation and uses varying ways of negotiating the course. Skills taught by using cartons include kicking, dribbling, punting, bowling, and throwing. (No refs.) - *B. Berman.*

Billings Public Schools
Billings, Montana 59101

1519 **GROVE, FRANCES A.; & KEERAN, CHARLES V.** Teaching the severely retarded to use playground equipment. *Challenge*, 5(1):1, 6-7, 1969.

A successful program to teach SMRs of the Pacific State Hospital how to use playground equipment has imparted new skills, increased alertness to the environment, and improved peer relations. The initial step in instruction was identification of children's needs (motor coordination, muscular strength, etc.), translation of needs into activities, and relating facilities and equipment to program needs. Step-by-step progressions, supervised by skilled employees, integrated playground experiences into ward programs. Training classes for psychiatric technicians – led by recreation therapists – attempted to indoctrinate the technicians with the program's feasibility and to link patient needs with activity techniques. Methods were suited to a child's capabilities, and motivation was achieved by participation of staff and expressions of pleasure at a child's achievements. Skills learned on the playground are now being used in other nonrelated situations. (No refs.) - *B. Berman.*

Pacific State Hospital
Pomona, California 91766

1520 **MEEHAN, DANIEL S.** Handicapped swim clinic. *Journal of Health Physical Education Recreation*, 41(8):66, 1970.

A swim clinic for instructors of the handicapped, conducted in the Denver area by the American Red Cross and the Denver Children's Hospital, has brought qualified speakers to talk on all aspects of working with the handicapped. Speakers, using a variety of films and other visual aids, have dealt with methods useful for MRs and a variety of the physically handicapped. Persons attending the clinic received materials, various charts, safety suggestions, and instruction concerning amputees, cerebral palsy, arthritis, muscular dystrophy, and multiple sclerosis. (No refs.) - *B. Berman.*

American Red Cross
Denver, Colorado

1521 **NEWMAN, JUDY.** Swimming for the spina bifida. *Journal of Health Physical Education Recreation*, 41(8):67, 1970.

Nine of 10 spina-bifida children at Angel View Children's Foundation, California, have learned to swim without any kind of mechanical aids. Catheters and bikini diapers and rubber pants have been successful in meeting the incontinence problems common to this affliction. Instructors concentrated on overcoming fear of water and on breath control, and used swim pageants as motivational devices. Pride in accomplishments within their physical limitations and relaxation have contributed greatly to these children's rehabilitation. (No refs.) - *B. Berman.*

Angel View Crippled Children's Foundation
Desert Hot Springs, California

1522 **WRIGHT, BETTY.** The Wedde handiswimmers. *Journal of Health Physical Education Recreation*, 41(8):69-70, 1970.

In Palo Alto, California, the Wedde Handi-swimmers, organized as a Guild of Community Associated for Retarded, have built a pool and conduct a program to instruct the handicapped in swimming, while providing fun and developing courage and self-esteem. Guided by a director and staff, and using volunteers of all ages, the program is open to MRs and physically handicapped pupils who have not yet attained a high-school diploma. The program's goals include imparting, through swimming, fun and recreation, social interaction abilities, and personality growth. Instructional methods seek first to eliminate fear of the water, then, in a warm and friendly atmosphere, utilize mutual participation of students, instructors, and spectators, with generous praise for all accomplishments. (No refs.) - *B. Berman.*

Community Associated for Retarded Swim Center
Palo Alto, California

1523 **WILLIAMS, MARIAN.** Whizzers on wheelchairs. *Instructor,* 79(10):71-73, 1970.

A summer recreation program was planned and instituted for nonambulant residents at the Woodbridge (New Jersey) State School for PMR children, many of whom have physical disabilities as well. The weekly schedule comprised 3 days of recreation (including music swimming, sports, and calisthentics), and one day each for special off-grounds trips and arts and crafts. The program demonstrates that, with careful planning, even nonambulant children can be included as either participants or observers. (No refs.) - *M-E. Sayre.*

Woodbridge State School
Woodbridge, New Jersey

1524 **JACOBS, O'NEAL, JR.** With the handicapped we can do...and we do it! *Instructor,* 79(10):70-71, 1970.

A day-camp program for MR children is described which operates five days a week from 9 A.M. to 3 P.M. The program covers all activities usually presented at a day camp, adapted to the abilities of the campers. The camp is staffed by several paid workers and a large number of volunteers. Special features are visits from experts in nature study, cooking, grooming, health and safety, as well as entertainers such as Indian dancers and fife and drum corps. The camp has influenced many of the younger staff members to enter such fields as teaching, medicine, and physical therapy. (No refs.) - *M-E. Sayre.*

Lealman Junior High School
St. Petersburg, Florida

FAMILY

1525 **BICKNELL, JOAN.** A place in the family. *Deficience Mentale/Mental Retardation,* 20(4):20-21, 1970.

Although it is frequently believed that a handicapped child inevitably creates insoluble difficulties in the home, overall surveys of families who were not problem oriented revealed that, in some families, the presence of a handicapped child contributed something positive and added to the cohesion of the family unit. The practical problems of caring for a handicapped child may be a source of family conflict; however, conflict usually stems from emotional factors. The initial reaction of parents to a handicapped child is to mourn. Some parents overcome feelings of rejection for the child and begin to accept the child while others cannot do this and suffer from chronic sorrow and unfulfilled longing. The handicapped child can fit into the family as an equal member. Brothers and sisters can be protective and proud of the handicapped child, if the parents have overcome their resentment. Adoption requests by parents of a handicapped child should be handled in ways which do not add to the idea that MR is a social stigma or question the parenting ability of the parents. (No refs.) - *J. K. Wyatt.*

No address

1526 **MEYER, ROGER J.; STAFFORD, RICHARD L.; & JACOBSEN, MILTON D.** Patterns of family followup: A study of children with mental retardation and associated developmental disorders. *Community Mental Health Journal*, 6(5):393-400, 1970.

Most families of children with MR and associated handicaps seemed to receive significant benefits from programs offered by a Pediatric Outpatient Clinic. Of 90 families who participated in a followup study 6 months after initial workup in the clinic, a significant number (.05 level) had received help with medication, developmental, social, school, and/or emotional problems. The parents of younger children, particularly, requested more help. There were significant correlations between age of child, father's occupation, and family income; the lower the income, the older the child. Nonwhite children were generally older than white children and their families had lower incomes, desired more help with home problems, needed more assistance with problem definition, and requested more medication than white families. Low income families benefitted more from problem diagnosis than high income families, while high income families received greater help from home programs and wanted less help in planning for other children. Emotional problems and requests for medical help and extensive problem explanation were greater in families where the mother did not work, while requests for school and social help and help with feelings about the problem of MR were fewer in these families. (14 refs.) - *J. K. Wyatt.*

School of Medicine
Northwestern University
Evanston, Illinois

1527 **STEPHENS, WYATT E.** Interpreting mental retardation to parents in a multidiscipline diagnostic clinic. *Mental Retardation*, 7(6):57-59, 1969.

Either the virtuoso model or the interaction model can be used to interpret diagnostic strategies to the parents of a handicapped child. In the virtuoso model, a large number of highly trained medical and paramedical specialists examine the child and arrive at decisions regarding etiology and prognosis. These results are shared with the parents in the presence of the child. Although this method has high community acceptance at the professional level, the interpretations offered generally do not have a positive effect on the parents' behavior and the method does not attend to the parents' ability to understand and accept adverse reports on their child's condition. In the interaction model, it is assumed that parents are not impressed by a collection of professional workers who are attempting to demonstrate their high skill levels to other professional workers, that parents are not helped by hearing detailed reports of laboratory findings, and that several interpretive sessions are more effective than one session. The number of professional persons interpreting MR should probably not exceed the number of parents. Interpretation should proceed along lines raised by the parent's questions. Parents are better able to accept an interpretation of MR when they can discuss their problem over a period of time. The interaction model is superior to the virtuoso model because it provides for prolonged parent contact and deals with underlying parent concerns. (No refs.) - *J. K. Wyatt.*

Southern Illinois University
Carbondale, Illinois

1528 **SALAGNAC, YVONNE.** Les parents et le travail de leur enfant (Parents and their children's work). *Deficience Mentale/ Mental Retardation*, 20(4):47, 1970.

To be able to say that their child is at work means to the parents of a MR child that he has "become like others." To reach this goal of integration by work is a window to the future, but it is up to the parents to make it come true. They will have to educate their children to do as much as they can do on their own or with guidance, rather than take the often easier way out of doing everything for them. Their work will have to be taken seriously, but the parents cannot expect that what children do at the age of 18 years will be a life-long pursuit: their condition may improve or deteriorate, requiring new arrangements. Parents will have to think not only of the work of the handicapped but also of their housing and leisure hours. This means that work — an important facet of integration — cannot be dissociated from the overall life of the children. (No refs.) - *K. Baer.*

No address

1529 Notre vocabulaire... et notre combat (Our vocabulary... and our fight). *Nos Enfants Inadaptes*, 33(I):1-2, 1970. (Editorial)

Such statements as "our children will never be like the others" or "we shall have to accept their inadaptability" must be avoided at all cost; our purpose is to make the maladjusted children, to the greatest possible extent, children like the others. Such automatisms of language as the statement ". . .we shall have to accept . . ." – actually an expression of masochistic resignation – are dangerous. One must not impose his resignation on the children and set limits for them. Saying that the children "must overcome" their problems is more to the point. The vocabulary must be more positive. (No refs.) - *K. Baer.*

1530 The mongol child and his parents. *Canadian Medical Association Journal*, 103(4):390-391, 1970.

Two recent reports have focused on the problems of parental reaction to mongoloid babies and of keeping the child at home. MR and the physical appearance of the mongol make rearing at home difficult. A British study recommends that the pediatrician who will be responsible for the child inform the parents of the child's condition between 6 weeks and 3 months; however, a Swedish report stresses the importance of informing the parents much earlier, a recommendation confirmed by interviews of 19 such couples. Of this group, 9 parents advised early placement, 8 felt the child should be at home until it was of school age, and 14 advised keeping the child home as long as possible despite problems of extra time required for child care, difficulty in finding babysitters, and insufficient help from community organizations. Parents who are better informed about mongolism are not necessarily more secure; however, early contact with other parents of mongoloids is helpful. Of 10 cases reported in the British study, parents achieved acceptance in 5; rejection was complete in 2; and emotional rejection occurred in 3. (No refs.) - *M. S. Fish.*

1531 **ALLEGRA, JAMES W.** A guide for parents of children receiving special education. *Rehabilitation Literature*, 30(9):269-270, 275, 1969.

Opportunities for the exceptional child are today brighter than ever, and parents have an obligation to help them toward fulfillment. Parents first must courageously and realistically face the need to place the child in a special-education environment. At home, the child needs a degree of structure, a scheduling of homework and TV watching, a household job, and preparation for each day's activities. Allowing the child to choose, with guidance, builds confidence and security. Parents should respond to a child's request for academic help, for positive learning will then occur, but the child should not be overburdened; parent-teacher conferences are vital. The child – regardless of his disability – wants to be, and must be, treated as an individual at his own level of competence; permissiveness brings behavior problems. The single most important developmental aspect is social contact, but the parent must screen contacts carefully and work intimately with group leaders in providing suitable and beneficial associations. (No refs.) - *B. Berman.*

No address

1532 **HAMMOND, JACK; STERNLICHT, MANNY; & DEUTSCH, MARTIN R.** Parental interest in institutionalized children: A survey. *Hospital and Community Psychiatry*, 20(II):338-339, 1969.

Inquiries sent to parents of 5,395 retarded children and asking whether the parents wished to discuss their child's progress and explore the possibility of taking him to live at home yielded only 749 replies within 3 months, of which a mere 77 (1.5%) were willing to consider taking the child home. The children of the 77 respondents included 37 adolescents and 16 adults, 17 profoundly or severely retarded, and 1 borderline defective. No replies came from parents of physically handicapped retardates. Of 283 families who had recently placed infants, 20.6% was willing to come in for discussion, but only 4 would consider home care. These saddening facts reflect the urgent need for additional community services. (No refs.) - *B. Berman.*

Willowbrook State School
Staten Island, New York 10314

1533 **BIRENBAUM, ARNOLD.** The recognition and acceptance of stigma. Paper presented at the Eastern Sociological Society, Fortieth Annual Meeting, New York

Hilton, New York, April 18, 1970, 19 p. Typed.

Interviews with 103 mothers of MR children were analyzed to determine the social nature of the recognition and acceptance of stigma attached to the diagnosis of permanent disability in a child. The mothers were asked to relate their early experiences after medical personnel had confirmed that their children deviated from normality. While it was often the mother of the MR child who first perceived that he was somehow different, the discrepancy between her institutionalized role and actual behavior did not become apparent until the diagnosis of MR was given by a specialist. Although mothers became aware of the possibility that their children might be retarded during their search for a satisfactory evaluation, most respondents described the experience of receiving the diagnosis of definite MR as a traumatic one which produced a stigma for the child and family. Supportive responses indicate to the parents that they are still accepted as members of the conventional social order despite the abnormality of their children and are thus conducive to the maintenance of family membership in social circles within the community. (10 refs.) - *B. J. Grylack.*

City College of New York
New York, New York 10031

1534 **von SCHILLING, KARIN C.** Needed: A positive approach to the mentally retarded. *Canadian Nurse*, 66(6):30-32, 1970.

Several ways are suggested in which both hospital and community nurses can assist the parents of retarded children in adjusting to their situation. An important role of the nurse is to provide emotional support to the parents at all stages from the child's birth through later prevention of physical and emotional isolation. Positive aspects should always be stressed. Among the problems discussed are parental reaction to a diagnosis of mental retardation; institutionalization vs. home care; learning potentials of retardates, especially those with Down's syndrome (mongolism); and the retardate's need for a sense of security, as well as for feedback to aid his learning, since "every child can learn." (4 refs.) - *M-E. Sayre.*

McMaster University School of Nursing,
Hamilton, Ontario, Canada

1535 **WOOD, T.** Nursing the mentally subnormal: The facts and the future. *Nursing Mirror*, 130(6):20-21, 1970.

Questions are raised concerning the definition of functions and of specialization for nurses of MR patients. Statements are set forth of needs for: the profession itself to locate quality recruits in quantity to replace those nearing retirement age; mutual respect between administrators and nursing staff; and increased income for nurses, in line with their responsibilities, terms of service, and working conditions. The field of MR nursing, in company with other areas of nursing specialties, is in a position where a fresh assessment and adjustment must be made to meet the specialized demands of technical and therapeutic advances. (No refs.) - *M-E. Sayre.*

No address

PERSONNEL

1536 **LYNCH, WILLIAM W., JR.** Instructional objectives and the mentally retarded child: What is the teacher's role? *Deficience Mentale/ Mental Retardation*, 20(4):9-11, 19, 1970.

Although teachers are frequently placed in information-gathering and interpretive roles, research data indicate that they frequently do not possess accurate information about their pupils, often ignore relevant information or emphasize other information, and fail to match clearly accessible probabilities. To enhance the development of instructional objectives for MRs, better technology, which reduces dependence on the teacher's skills, is needed. Ancillary professionals need to provide more and better services. Specialized forms of teaching, such as team

teaching and subprofessional assistance, need to be developed. "Operant specialists" could train teachers to arrange reinforcement contingencies in classroom settings. New rationales for teaching MRs hold that the teacher's primary tasks are to shape better responses and regulate reinforcement contingencies. Improved teacher education should concentrate on rigorous and intensive training in relevant skills. (1 ref.) - *J. K. Wyatt.*

Indiana University
Bloomington, Indiana 47405

1537 **KENDALL, DAVID C.** The training of educational personnel to work in the rehabilitation field. *Rehabilitation Digest*, 2(2):7-10, 1970.

Training teachers in rehabilitation must be integrated with the overall curriculum and organization of the ordinary school—not in isolation from the school system. Professional barriers between the special-education teacher and regular teachers must be broken down. The number of special teachers and the quality of their training must be upgraded, and inservice and regular university facilities must be utilized. Special-education teachers must be sensitive and must develop skills in understanding the handicapped child, using remediation techniques in small and large groups, and in communicating with pupils, parents, and other professionals. Joint seminars involving teachers, social workers, psychologists, doctors, nurses, and other rehabilitation personnel are important. Training should include, also, intensive courses in specialized education, covering characteristics and needs of exceptional children. School districts must have only properly trained personnel and make extensive use of aides and volunteer workers. (No refs.) - *B. Berman.*

University of British Columbia
Vancouver, British Columbia, Canada

1538 **BOZARTH, J. D.; & DALY, W. C.** Three occupational groups and their perceptions of mental retardation. *Mental Retardation*, 7(6):10-12, 1969.

Work supervisors rated the performance of institutionalized MRs (CA range 16 to 21 yrs; IQ range 40 to 80) significantly higher than did either education and activities employees or child care aides. The ratings of education and activities employees were lower than those of child care aides. Significant between-group differences (beyond .01 and .05 levels) were found on 13 of 14 variables on the first administration of a 14-item Likert-type rating scale and on 9 of 14 variables on the second administration 3½ months later. Among the consistently significant variables were: cooperates with supervisors, minds own business, accepts criticism, mixes socially with others, is neat and clean, on time, and shows initiative. These findings suggest that fair and accurate measurement of improvement, which encompasses a broad range of behaviors and attitudes, requires a combined multi-group rating. (7 refs.) - *J. K. Wyatt.*

Rehabilitation Research and Training Center
University of Arkansas
Fayetteville, Arkansas

1539 **RICHARDS, MARGARET.** The role of a social worker in counseling and support. *Developmental Medicine and Child Neurology*, 11(6):786-791, 1969.

The social worker can help to improve communication among the various professional personnel involved with handicapped children and coordinate their efforts. The social worker can also be helpful to the child's parents and as an advisor to planning and financing agencies. At present there is considerable overlapping, distrust, and contradiction, with impractical attempts by one group to limit the roles of others. Good teamwork is needed. Several illustrative cases are presented. (No refs.) - *E. Kravitz.*

London Borough of Newham
London, E.13, England

1540 Nurse or educator? *Nursing Mirror*, 130(18):12, 1970.

At the Royal Medico-Psychological Association symposium on the problems in providing nursing services to the MR, it was the consensus that nurses of the MR should be able to provide comprehensive care and continuity of care. Nursing problems include: management; inadequate facilities; shortage of nursing staff; and staff education, including the need for training in attitudes appropriate to caring for the MR and in skills such as psychiatry, remedial gymnastics, teaching, or occupational therapy. The nurse must become the all-purpose, skilled "attendant." (No refs.) - *M-E. Sayre.*

AUTHOR INDEX

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